This is a digital copy of a book that was preserved for generations on library shelves before it was carefully scanned by Google as part of a project to make the world's books discoverable online.

It has survived long enough for the copyright to expire and the book to enter the public domain. A public domain book is one that was never subject to copyright or whose legal copyright term has expired. Whether a book is in the public domain may vary country to country. Public domain books are our gateways to the past, representing a wealth of history, culture and knowledge that's often difficult to discover.

Marks, notations and other marginalia present in the original volume will appear in this file - a reminder of this book's long journey from the publisher to a library and finally to you.

Usage guidelines

Google is proud to partner with libraries to digitize public domain materials and make them widely accessible. Public domain books belong to the public and we are merely their custodians. Nevertheless, this work is expensive, so in order to keep providing this resource, we have taken steps to prevent abuse by commercial parties, including placing technical restrictions on automated querying.

We also ask that you:

+ *Make non-commercial use of the files* We designed Google Book Search for use by individuals, and we request that you use these files for personal, non-commercial purposes.

+ *Refrain from automated querying* Do not send automated queries of any sort to Google's system: If you are conducting research on machine translation, optical character recognition or other areas where access to a large amount of text is helpful, please contact us. We encourage the use of public domain materials for these purposes and may be able to help.

+ *Maintain attribution* The Google "watermark" you see on each file is essential for informing people about this project and helping them find additional materials through Google Book Search. Please do not remove it.

+ *Keep it legal* Whatever your use, remember that you are responsible for ensuring that what you are doing is legal. Do not assume that just because we believe a book is in the public domain for users in the United States, that the work is also in the public domain for users in other countries. Whether a book is still in copyright varies from country to country, and we can't offer guidance on whether any specific use of any specific book is allowed. Please do not assume that a book's appearance in Google Book Search means it can be used in any manner anywhere in the world. Copyright infringement liability can be quite severe.

About Google Book Search

Google's mission is to organize the world's information and to make it universally accessible and useful. Google Book Search helps readers discover the world's books while helping authors and publishers reach new audiences. You can search through the full text of this book on the web at `http://books.google.com/`

3 3433 00056151 8

Fry[illegible]
K[illegible]

PRIMARY

GEOGRAPHY

BY

ALEX EVERETT FRYE

AUTHOR OF "CHILD AND NATURE," "BROOKS AND BROOK BASINS," ETC.

NEW YORK
PUBLIC
LIBRARY

BOSTON, U.S.A.
GINN AND COMPANY, PUBLISHERS
1894

THE MISSES ELY

THE NEW YORK
PUBLIC LIBRARY
213713
ASTOR, LENOX AND
TILDEN FOUNDATIONS
1901

COPYRIGHT, 1894
BY ALEX EVERETT FRYE

ALL RIGHTS RESERVED

The Athenæum Press
Ginn & Company

PREFACE.

Attention is invited to the following features of this book:—

Text. — *The aim has been to use language suited to pupils of primary grades.* Open the book at any page, and see whether the author has hit the mark.

The subject is treated topically. The day of patchwork teaching has passed. Teachers have long been asking for a text-book based on the topical study of the earth. This book holds the *earth as a unit* before the mind, and relates all study to that unit. The memory is thus aided and much time is saved.

The underlying principle of this work is comparison. Glance at the little maps on pages 29 and 33, and this thought will be made clear. Each part — ocean or grand division — is shown in its relation to the whole and to the other parts.

The text on PEOPLE centers in child-life. The word *race* has a deeper meaning than is taught by the size of cheek bones or the texture of hair. This book leads pupils into the *homes of the races.* Read to a child one of the stories on pages 55 to 72, and note the result.

Plants and animals are studied in their relations to climate and physical features. Here, again, the earth is the unit of study. Belts of heat, and not mere zones of light, are made the basis of this work.

Every child should know a great deal about his own state and about his own country. The various editions of this book present special state texts, while the body of the book treats of the leading industries of the United States *as a whole.* The cruel and senseless study of countless details concerning the separate states is here replaced by a general view of the resources and industries of the whole nation. This work has been laid before thousands of teachers, and the author has yet to meet the first teacher who does not welcome the change.

This book is not a condensed edition of the larger book of the series. Primary Geography rests on a basis of its own. Only the leading topics of the science are here treated. These are clothed with stories of people, plants, animals, natural scenery, etc.

A Manual of Methods, containing suggestions for teachers, accompanies this series of books.

Pictures. — *The pictures are true to nature.* With but few exceptions they were engraved directly from photographs.

The pictures supplement the text. A glance at pages 13 and 17 will show how they afford teachers an opportunity to lead far beyond the text.

The pictures present typical forms. In place of mere definitions, or word-shells, the text and pictures bring pupils face to face with nature in its variety. See pages 10 and 11.

The pictures are works of art. It is thought that they are superior to any ever before placed in a schoolbook.

Acknowledgments. — In the treatment of types of natural features, as well as in criticism of other parts of the work, Professor W. M. Davis, Harvard University, has given very valuable assistance.

The author desires to express his gratitude to Mr. Justin H. Smith, of Boston. Some of the leading features of this book embody his original thought.

The relief maps were modeled under the supervision of the author, by Miss Gertrude Beatrice Wright, of the Normal Art School, Boston.

The Industrial Maps of the United States were drawn by Mr. Henry Gannett, Chief Topographer of the United States Geological Survey.

A. E. FRYE.

Boston, May, 1894.

TABLE OF CONTENTS.

HOME GEOGRAPHY.

PAGE
Geography 1
Hills and Valleys 2
Brooks and Rivers 2
Slopes 2
Kinds of Soil 3
Work of Water 3
Loose Soil 3
Rain in the Soil 4
How Soil settles 4
Work of the Brooks 4
Mud Banks or Deltas 5
Water and Heat 5
Forms of Water 6
Springs 7
Sources of Streams 7
Where Brooks flow 8
Systems and Basins 8
The Top of a Ridge 8
Divides 9
How Slopes are worn 9
Beds of Streams 10
Valleys 11
Mountains 12
Plains 14
Shore Forms 15
Work of Water on Shores 16
Points of the Compass 18
How Maps are made 18
Reading Maps 19

THE EARTH.

Form and Size of the Earth . . . 20
What a Hill is made of 21
PAGE
What the Earth is made of 21
The Air 21
The Shell of Air 21
The Poles 22
The Equator 23

SLOPES OF THE EARTH.

The World Ridge 24
Andes Highland 25
Rocky Mountain Highland 25
Highland of Tibet 26
Highland of Abyssinia 26
Slopes from World Ridge 27
Selvas 27
Western Plains 27
Tundras 27
Desert of Sahara 28
The Grand Divisions 28
The Oceans 29
Bottom of the Sea 30
Coral Islands 30

SOUTH AMERICA.

Surface of South America 31
Map Studies 33
Amazon River 33
Highland of Brazil 34
Pampas 34
Isthmus of Panama 34

NORTH AMERICA.

Surface of North America 35
Map Studies 37

PAGE
THE ROCKY MOUNTAINS 37
COLORADO CAÑON 38
THE HEIGHT OF LAND 38
THE MISSISSIPPI BASIN 39
NORTH OF HEIGHT OF LAND 40
APPALACHIAN HIGHLAND 40
ATLANTIC SLOPE 40
PACIFIC SLOPE 40

ASIA.

SURFACE OF ASIA 41
MAP STUDIES 43
ARCTIC SLOPE 43
CASPIAN BASIN 43
PLAINS OF CHINA 44
THE GANGES BASIN 44

EUROPE.

SURFACE OF EUROPE 45
MAP STUDIES 47
SLOPES FROM SWISS HIGHLAND 47
VALDAI HILLS 48
THE CASPIAN SEA 48
BRITISH ISLES 48

AFRICA.

SURFACE OF AFRICA 49
MAP STUDIES 51
THE RIVER NILE 51
OASIS IN THE DESERT 52
KONGO BASIN 52

AUSTRALIA.

SURFACE OF AUSTRALIA 53
MAP STUDIES 54

PEOPLE.

TIBBU, THE KONGO BOY 55
JAPAN AND ITS PEOPLE 57
MALAY OR BROWN PEOPLE 59
A LAPLAND HOME 61
CHUGLU, THE ESKIMO BOY. 62
CHILDREN OF INDIAN TRIBES 65
LAND OF THE ARABS 66
CHILDREN OF THE LOWLANDS 69
CHILDREN OF THE HIGHLANDS 70
HOMES OF THE RACES 73
HOMES OF THE NATIONS 73
MAP STUDIES 74

HEAT, WIND AND RAIN.

HOME LESSON FOR A HOT DAY 75
HOW THE AIR IS HEATED 75
HOW THE EARTH IS HEATED 75
HIGH AND LOW LAND 76
THE SEASONS 76
CHANGE OF SEASONS 76
A SIGN OF SPRING 76
BELTS OF HEAT 77
THE TRADE WINDS 78
THE GULF STREAM 78

PLANTS.

WHERE PLANTS GROW 79
SOIL, WATER AND HEAT 79
PLANTS OF THE HOT BELT 80
PLANTS OF THE WARM BELTS 81
PLANTS OF THE COOL BELTS 82
PLANTS OF THE COLD BELT 82
USES OF PLANTS 82

ANIMALS.

ANIMALS, — THEIR TEETH, ETC. 83
ANIMALS AND THEIR HOMES 83
ANIMALS OF THE HEAT BELTS 84
USES OF ANIMALS 85

THE UNITED STATES.

SURFACE OF THE UNITED STATES 86
PEOPLE 87
JULY 4, 1776 88
MAP STUDIES OF STATES 89
LEADING CITIES 89
COTTON 92
MAIZE OR INDIAN CORN 93
WHEAT 94
FORESTS 95
CATTLE 96
COAL 97
IRON 98

PAGE
Gold and Silver 99
Routes of Trade 100
New York 101
Boston 101
New Orleans 102
San Francisco 102
Philadelphia 102
Chicago 103
St. Louis 103

NORTH AMERICA.

The United States 104
Canada 104
Mexico 104

SOUTH AMERICA.

Brazil 106
Argentine Republic 106
Chile 106

EUROPE.

PAGE
British Isles 108
Germany 108
France 108

ASIA.

India 110
China 110
Japan 110

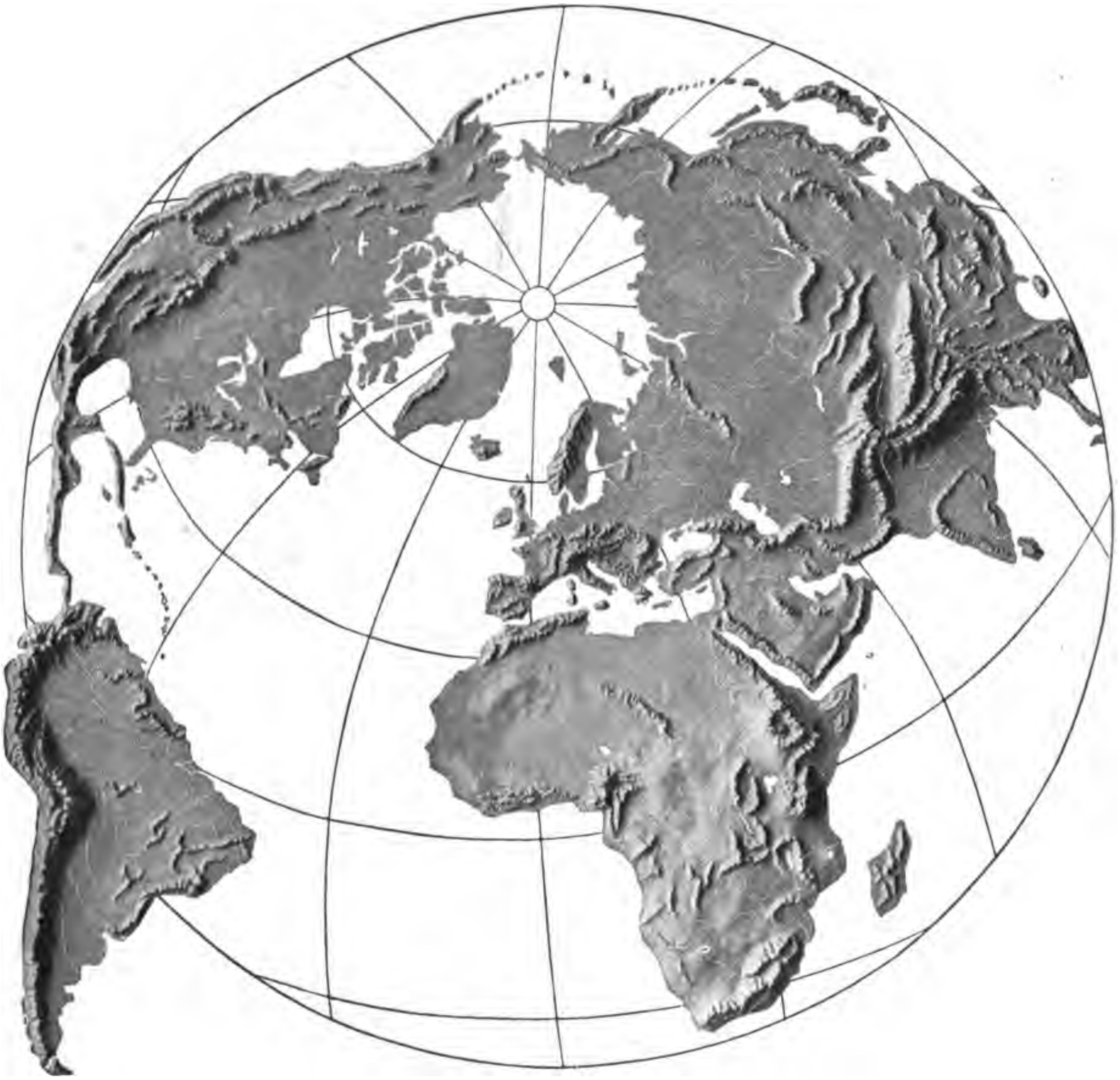
AFRICA.

Egypt 112
Cape Colony 112

AUSTRALIA.

Victoria 114
New South Wales 114

SUPPLEMENT.



RELIEF MAP OF THE WORLD.

NOTE. — In this picture we view the earth from a point nearly over the British Isles. The southern half of South America cannot be seen from this point. In order to bring it into sight, we must think of it as being lifted from the other side of the earth and swung round into the place where it now appears.

The picture on page 77 shows still more of the land swung round from the side of the earth opposite that shown above.

The Earth in Space.

HOME GEOGRAPHY.

1. Geography.

See *Teachers' Manual of Methods in Geography.*

THIS book tells a story about the *earth,*— the great ball of land and water on which we live.

After studying that part of the earth which is near our school, we shall visit the homes of girls and boys in other lands.

We shall see little yellow people feeding silkworms, and picking leaves from tea plants.

The Arab boy will show us his father's camels and horses, and will tell us about the great desert that spreads round his home.

In the land of the brown people we shall find groves of spice, and the brown girls will weave pretty baskets for us.

The Eskimo boy will show us how to crawl into his snow hut, and will tell us how his father hunts the seal for food and clothing.

We may also peep into tall straw huts, and see the black people in their far-off home.

We shall pass by acres and acres of waving grain, and wide fields hidden with soft white cotton.

We shall climb high mountains whose tops are buried in ice and snow.

Every day of our journey will bring new sights, and tell new stories of the beautiful earth on which we live.

A story of the earth and its people is called *Geography.*

See page 126 for pronunciation of hard words.

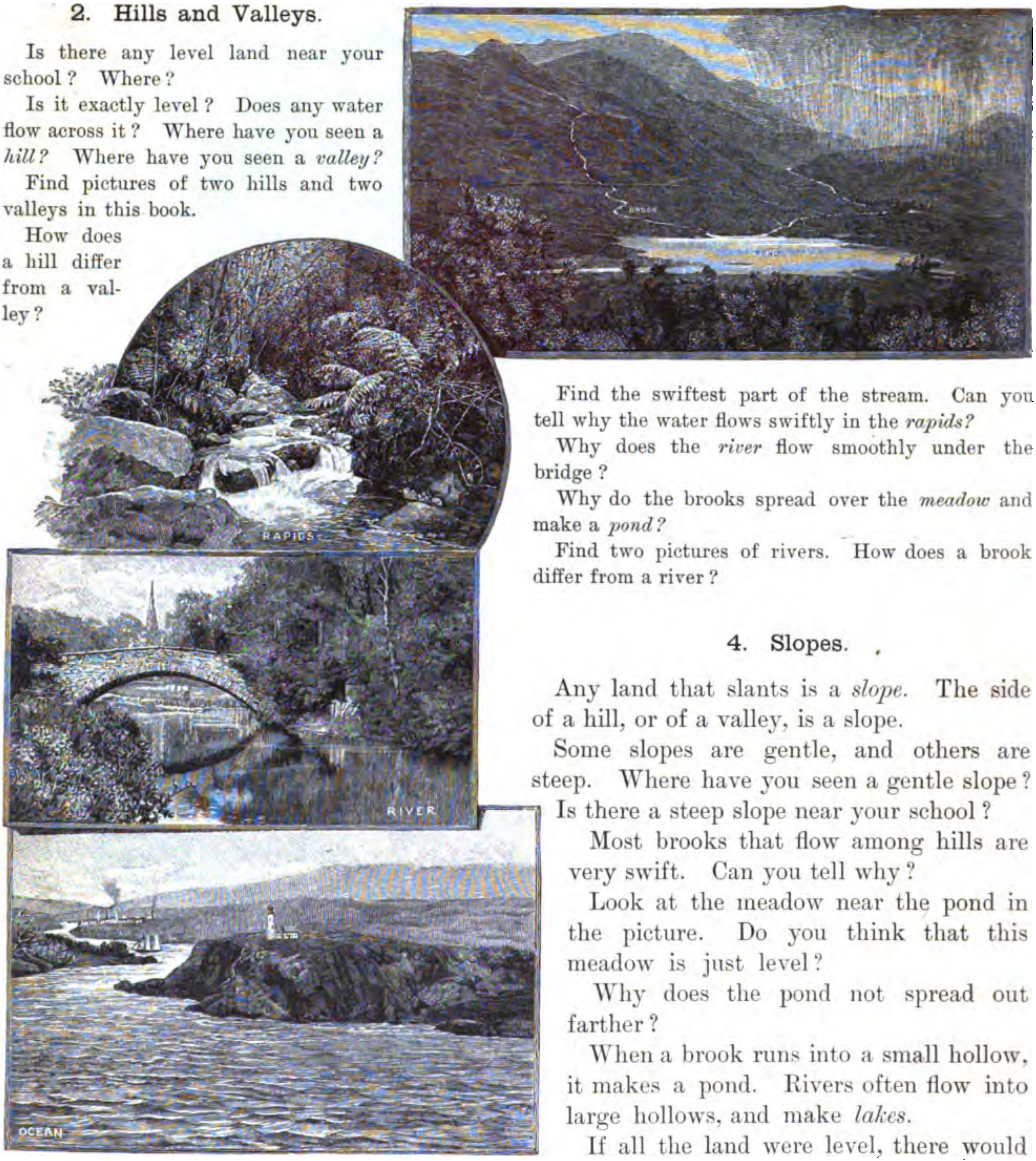
2. Hills and Valleys.

Is there any level land near your school? Where?

Is it exactly level? Does any water flow across it? Where have you seen a *hill?* Where have you seen a *valley?*

Find pictures of two hills and two valleys in this book.

How does a hill differ from a valley?



From Source to Mouth.

3. Brooks and Rivers.

How many *brooks* can you see in the picture? Where does the water in the brooks come from?

Find the swiftest part of the stream. Can you tell why the water flows swiftly in the *rapids?*

Why does the *river* flow smoothly under the bridge?

Why do the brooks spread over the *meadow* and make a *pond?*

Find two pictures of rivers. How does a brook differ from a river?

4. Slopes.

Any land that slants is a *slope.* The side of a hill, or of a valley, is a slope.

Some slopes are gentle, and others are steep. Where have you seen a gentle slope? Is there a steep slope near your school?

Most brooks that flow among hills are very swift. Can you tell why?

Look at the meadow near the pond in the picture. Do you think that this meadow is just level?

Why does the pond not spread out farther?

When a brook runs into a small hollow, it makes a pond. Rivers often flow into large hollows, and make *lakes.*

If all the land were level, there would be no hills nor valleys, no ponds nor lakes, no brooks nor rivers.

Find three pictures of steep slopes, and three pictures of gentle slopes.

5. Kinds of Soil.

Which is the finer, loam or sand? Loam or clay?

Pour some water on loam, on sand and on clay.[1] Into which does the water sink most quickly?

Which dries soonest, the loam, the sand or the clay?

What becomes of plants that die, and of leaves that fall?

Find as many kinds of soil as you can. Put each kind in a bottle by itself.

What kind of soil covers the fields or yards near your school?

Can you find out what is under the soil?

6. Work of Water.[2]

How hard it rains!

The river is swift and muddy. Where does the muddy water come from?

Let us go out on the side of the hill. Can you see the tiny streams or rills which the rain makes? Look closely! They are very small.

Many of the rills are muddy. These are washing away the finest soil. Watch the rills that are rolling sand down the steep places.

The rills cannot carry sand very far. They must leave it in the hollows and on the level places. Can you tell why?

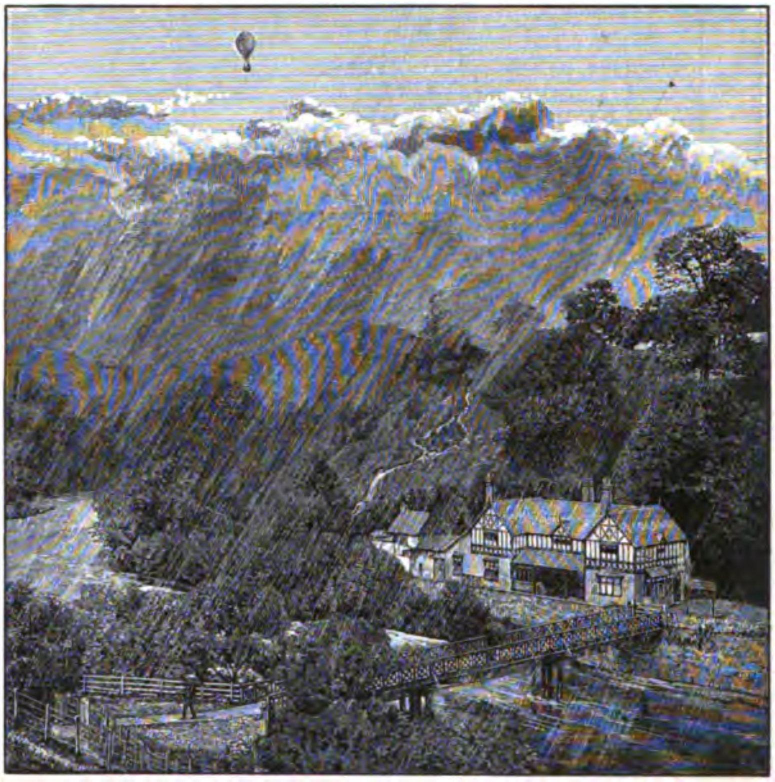
What will become of the fine soil that makes the rills muddy? The little streams will carry some of it down to the river.

See the balloon! It is floating in the clear air, far above the clouds.

7. Loose Soil.[3]

Pour some water on hard ground. Wait two minutes, then dig and see how far the water has settled.

Loosen a little patch of ground with a spade, and pour on some water. After two minutes, find out how far it has gone into the soil.



Rainstorm.

Farmers plow in order to turn up fresh soil, and to loosen it, so that the rain can easily settle.

Do you know what frost does to the soil?

---

[1] A small box of each will answer for the entire class.

[2] Weather Record. — In a notebook keep a *daily* record of the weather. In the afternoon write whether the day has been *hot*, *warm*, *cool* or *cold; clear*, *cloudy*, *rainy* or *snowy; calm* or *windy*. Be sure to write the date.

This record will show you how to keep yours.

Dec. 6	. . . . warm	rainy	windy
7	. . . . cold	clear	windy
Dec. 8	. . . . cool	clear	calm
9	. . . . cool	rainy	windy

Keep the record every school day for a year. Perhaps you can also take notes for holidays. At the end of the year you can count and find out which month has had the greatest number of warm days, rainy days, etc.

[3] Home work for pupils who wish to try the experiment.

8.

Rain in the Soil.

Indian Corn.

Apple Blossoms.

When it rains, some water sinks into the ground. It moistens the soil around seeds. At the right season they sprout and grow through the soil.

The rain flows among grass roots, and little blades shoot up, making the fields green.

The water is taken into the roots of trees. It rises to the sleeping buds, and pretty leaflets unfold.

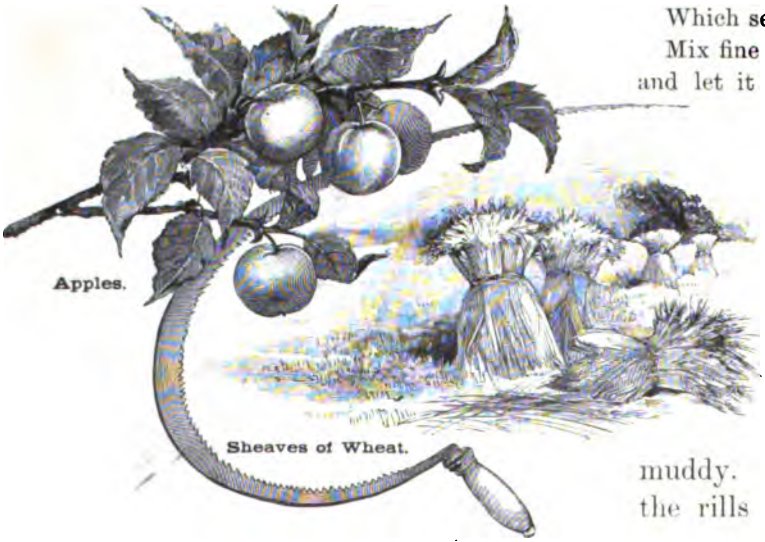
Now the blossoms hang in clouds, and later they fall like snow. Grain sprouts, grows up and waves in the fields.

At length the boughs bend low with fruit. Sheaves of wheat dot the fields, and long ears of corn ripen in the sun.

All the time the plants are growing, water in the soil helps to feed them.

Have you ever seen worms crawling out of the ground?

Worms grind leaves, and mix them with soil. They bring rich earth to the surface, and make little mounds of it.



Apples.

Sheaves of Wheat.

Have you ever watched ants building their hills? Do you know of any place where ants are at work near your school? Where do they get fine earth for their hills?

Mounds made by worms and ants are often dotted over the fields. Raindrops spread these mounds, and carry some of the rich soil down again to the roots and seeds.

Growing Pumpkins.

9. How Soil Settles.

Mix fine soil in one glass of water, and coarse sand in another. Let the water stand for a while, and see what takes place.

Which settles first, the soil or the sand?

Mix fine loam and coarse sand in a glass of water, and let it stand. Which settles on the other, the loam or the sand?

10. Work of the Brooks.

What is the swift part of a brook called? Can you tell why?

Below the *rapids* there is a small pond. This pond is only a wide place in the brook. Rain has been falling, and the brook is muddy. It has a load of fine soil which the rills have brought from the slopes.

Let us throw two or three pailfuls of gravel into the rapids. See what takes place.

The pebbles sink in the rapids, where the water is swift. Some are rolling down the slope under the water. Can you tell what moves them?

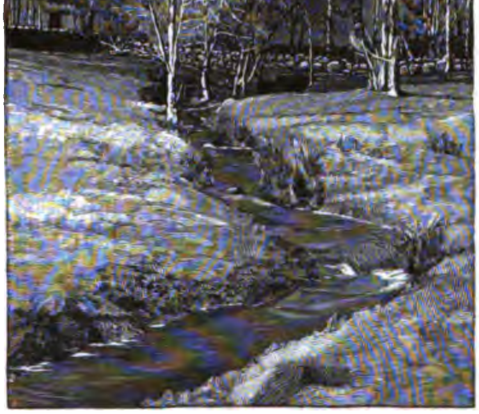
Here is the sand below the rapids. Watch it spreading on the bottom. It looks like a great leaf. Why does the sand settle here? Why did it not settle in the rapids?

Look into the pond where the water is still. The muddy water is flowing into it. Let us wait a little while and find out where the fine soil goes.

The part of the brook that flows out of the pond is not muddy. It has left the fine soil under the still water.

If there were no pond, what would become of the muddy water?

Rapids.



Brook.

11. Mud Banks or Deltas.

Look once more at the mud on the bottom of the pond.

When it rains again, more soil will be brought down by the rills and brook. In time a little mud bank will form near the place where the brook flows into the pond.

When the water is low the mud will stand above it.

After a long time the soil may fill the whole pond, except where the brook keeps a path or *channel* open. As the new bank of soil grows, grass and flowers will cover it, and make it look like other parts of the field.

Thus, water wears down the high land and so makes the slopes more even.

Mud banks that form where streams flow into still water are called *deltas*. A delta cannot form in water that moves swiftly. The soil is swept away and cannot settle.

Most of the rivers in the world flow into a great body of salt water, called the *ocean* or the *sea*. Rivers make many deltas on the shores of the ocean. Some deltas are so large that cities are built on them.

Let us next find out where the water in brooks and rivers comes from.

12. Water and Heat.

Put a few drops of water into a tin cup, and heat it. Where does the water go?

The water in the cup changes into *vapor*. We cannot see the vapor, but it is floating in the air.

Heat a small bottle of water over a lamp. What takes place inside the bottle? What comes from the bottle?

Hold a piece of cold glass in the *cloud* that you can see coming from the bottle. Of what is the cloud made?

Breathe against a cold window. What is in the breath?

Have you ever seen your breath? Was it on a cold day or on a warm one?

Put a little water into a shallow basin, and let it stand in the sun. Where does the water go? Into what does it change?

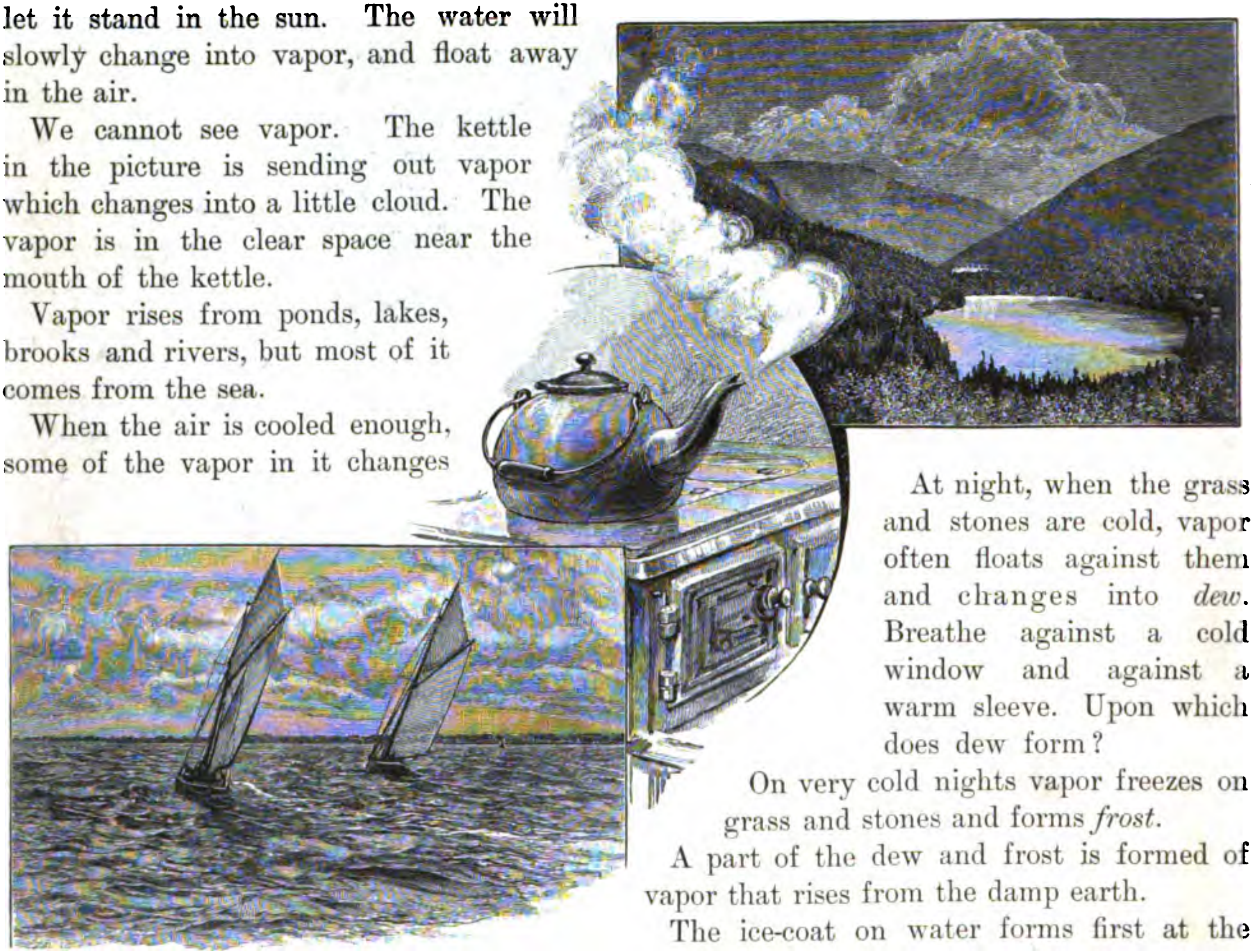
What makes the little cloud that comes from the kettle in the picture?

13. Forms of Water.

Put some water into a shallow basin, and let it stand in the sun. The water will slowly change into vapor, and float away in the air.

We cannot see vapor. The kettle in the picture is sending out vapor which changes into a little cloud. The vapor is in the clear space near the mouth of the kettle.

Vapor rises from ponds, lakes, brooks and rivers, but most of it comes from the sea.



When the air is cooled enough, some of the vapor in it changes into large clouds, such as we often see floating above us.

Were you ever in a *fog?* Did it look like *water dust?* Fog is a cloud near the earth.

When enough vapor has changed into cloud, some of the particles of water fall through the air. Many particles run together and form drops of *rain.*

Have you ever seen any *hail?* Did it look like frozen rain?

When the air is very cold a part of the vapor in it sometimes freezes into crystals or flakes of *snow.* If you will catch some snowflakes on a piece of black cloth, you will find that they have very pretty shapes.

At night, when the grass and stones are cold, vapor often floats against them and changes into *dew.* Breathe against a cold window and against a warm sleeve. Upon which does dew form?

On very cold nights vapor freezes on grass and stones and forms *frost.*

A part of the dew and frost is formed of vapor that rises from the damp earth.

The ice-coat on water forms first at the surface. If the freezing began at the bottom, many lakes and streams would become solid masses of ice. The fish in them would die, and even the summer sun could not melt the ice in deep water.

What are the uses of ice?

Perhaps these words will help you to think of some of the uses of water: — kitchen, travel, mill, plant, river, rain, ocean, well.

14. Springs.

Why does rain not fill the soil?

Have you ever seen water flow out of the ground?

Is there a *spring* near your home? If so, tell what it is like.

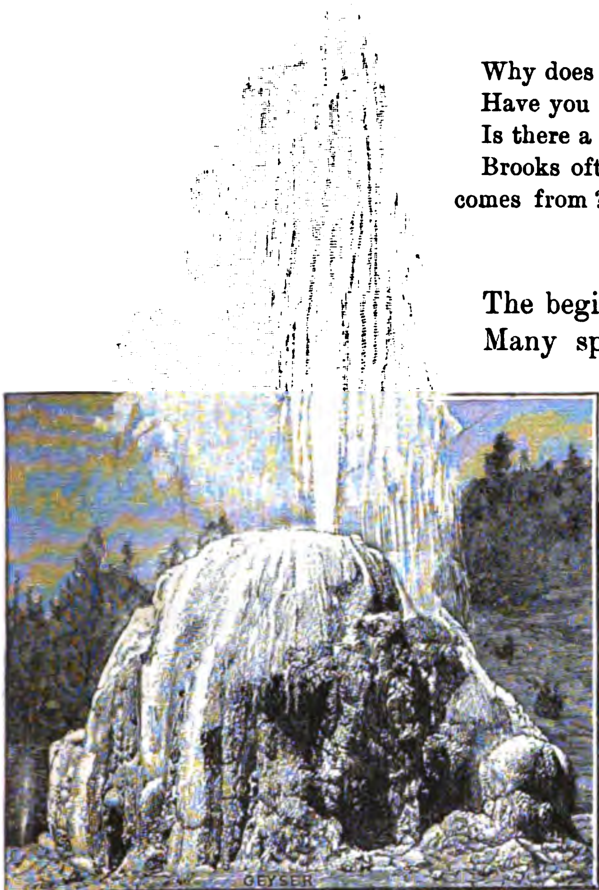
Brooks often flow in dry seasons. Can you tell where the water comes from?

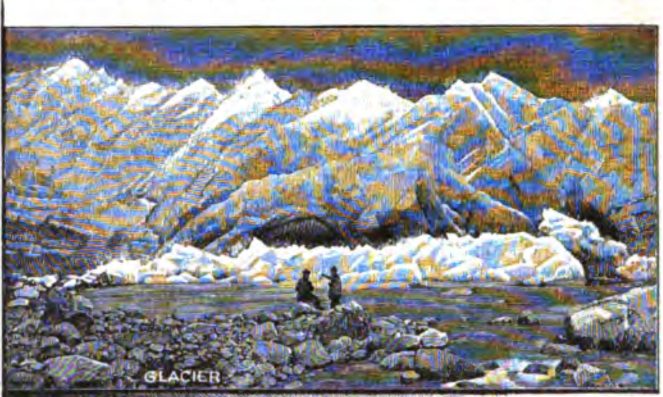
15. Sources of Streams.

The beginning of a brook or river is called its *source*.

Many springs form at the foot of hills, and also in meadows.

Many others bubble up in the bottoms of brooks, ponds, rivers and lakes. Ponds and lakes store up water, and supply it to brooks and rivers long after the rain is over.





Do you see the large brook or river that flows from under the ice? The tops of many mountains are covered with ice and snow all the year. Many streams are formed by the melting ice and snow.

Should you like to see hot water spout out of the ground? It often shoots up as high as a very tall tree. There must be a very hot place in the earth under the *geyser*.

From some springs there is a gentle flow of warm or hot water. Find the picture of the *hot springs*. Do you not think that they have made many pretty basins?

16. Where Brooks Flow.

Why do brooks flow in crooked lines?

In what direction does every stream flow?

Why are some brooks swift and others slow?

Why is a brook wider in some places than in others?

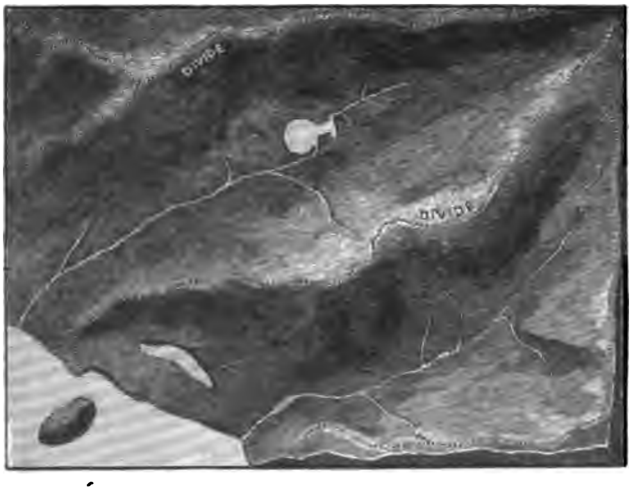
What are the uses of brooks and ponds?

17. Systems and Basins.

Streams often flow from many small valleys into a large valley.

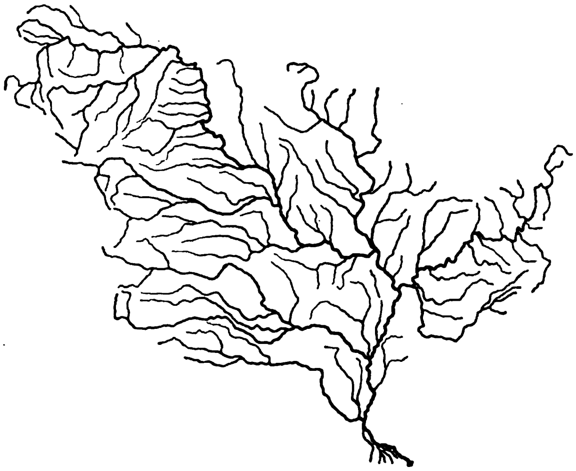
All the *streams* that meet in one valley form a *system*. A *river system* includes the main river of the valley, and all the rills, brooks and rivers that flow into the main one.

All the land that sends water to a brook forms the *basin* of the brook. A basin is made of slopes.



A Divide.

Every stream is in a basin. A *river basin* includes all the land that is drained by a river system.



Mississippi System.

Every large basin is made of many small ones.

Many brook basins send water to one river. A large river basin often includes many smaller river basins.

The Mississippi system drains about a million square miles of land. This vast tract of land forms the Mississippi basin.

The main stream of this system is the longest river on earth.

How does a basin differ from a system? Point to the basins and systems in the picture on the opposite page.

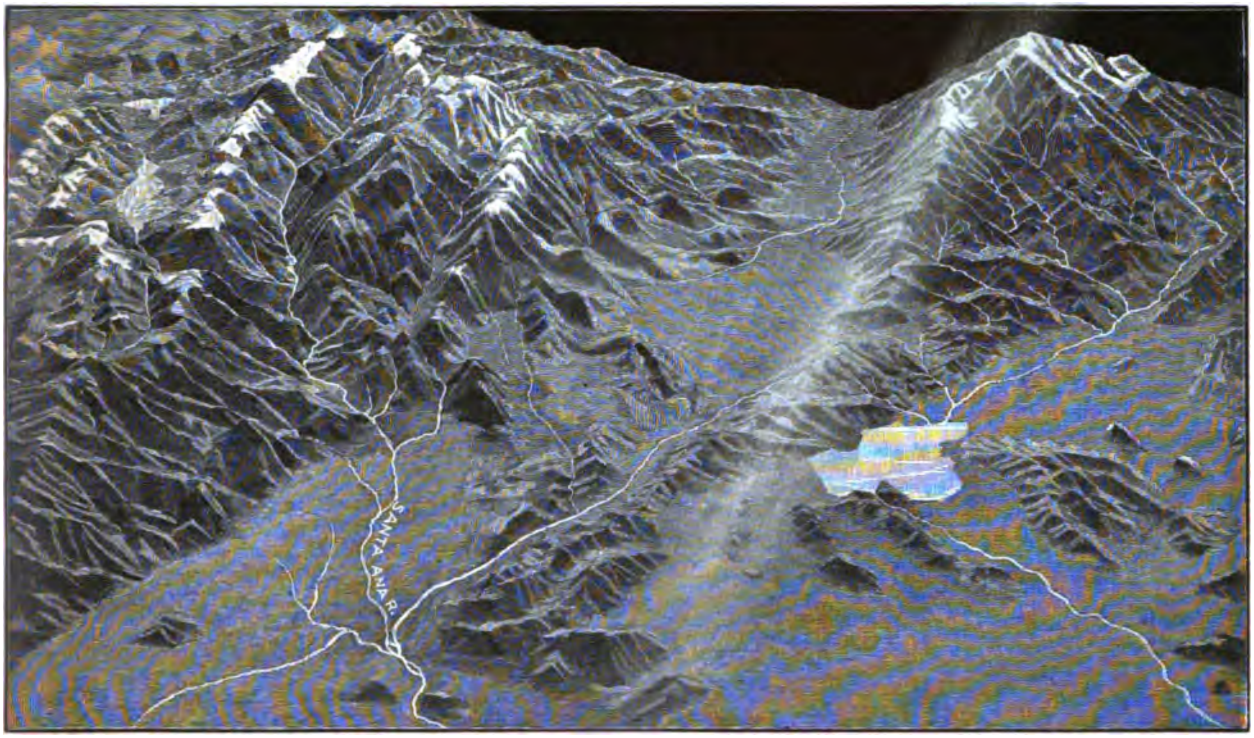
18. The Top of a Ridge.

Here is a picture of a ridge that rises between two long narrow valleys.

When rain falls on the top of this ridge, into which valley does it flow?

What part of the ridge is in each valley?

Point to the line that runs along the very top of the ridge. This line is called a *divide*. It divides the valleys.



San Bernardino Mountains, Cal. **San Jacinto Mountains.**

19. Divides.

The slopes of the large valleys in this picture begin at the tops of the high ridges. Each slope starts at a divide.

Some divides are on high land where snow lies all the year. Other divides are low. If it were not for running water it would be hard to find them.

The rain that falls on any slope flows into the valley to which that slope belongs.

A divide is often called a *water parting*. Can you tell why?

Find on the map a water parting that is on very high land. Find one on low hills; another on land that is nearly level.

Point as near as you can to the sources of all the streams that flow into the Santa Ana river. All the slopes that send water to these streams are in the Santa Ana basin. Trace the divide that bounds this river basin.

20. How Slopes Are Worn.

Find a piece of wood that has lain a long time on the ground. Cut into it. Has any part begun to decay?

Break open a small round stone, or a large pebble. Which part has begun to decay? Which part looks brightest?

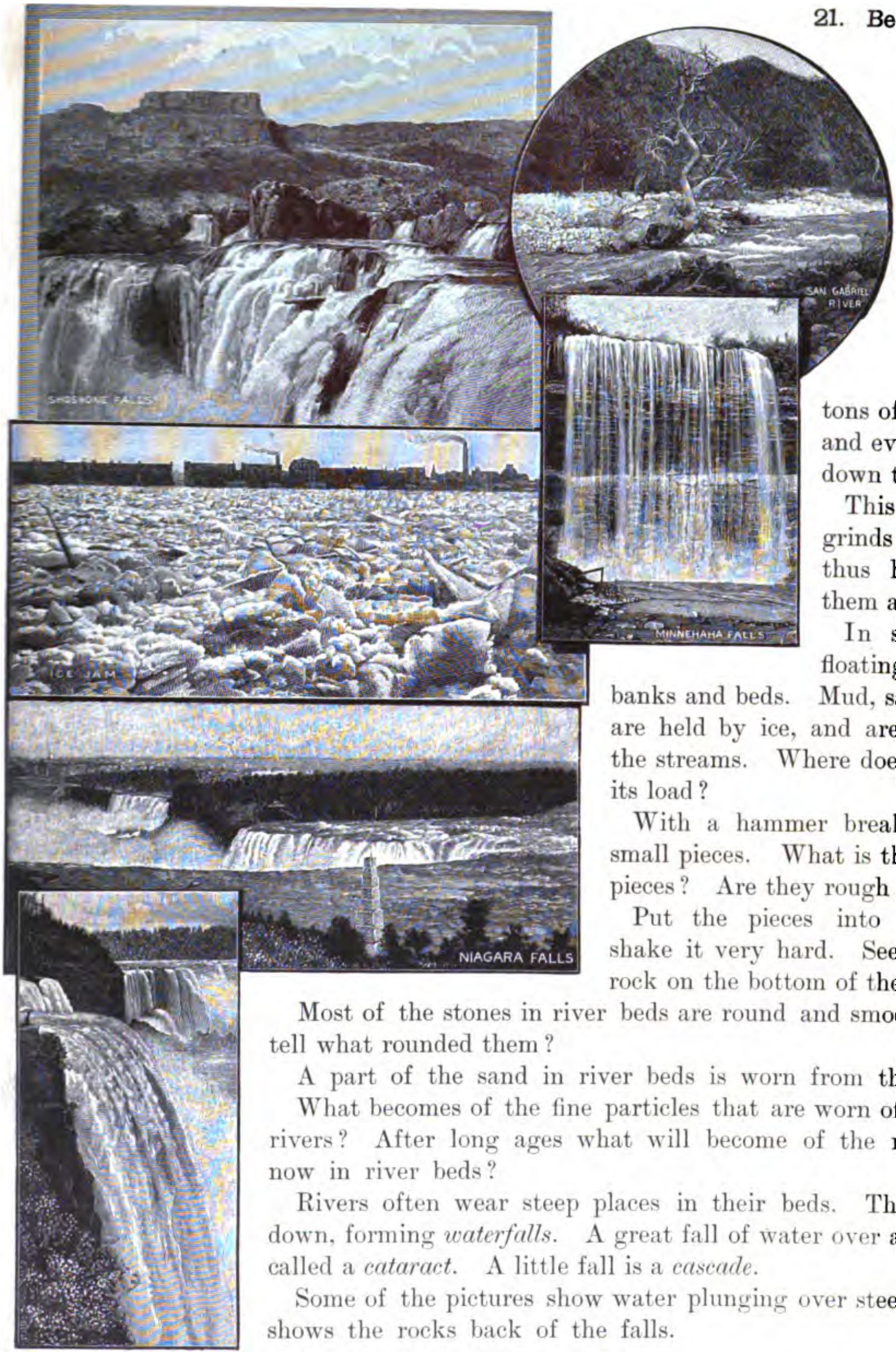
Wood decays, and so do rocks decay. All rocks, both large and small, slowly crumble into soil.

Wind blows dust and sand about. Raindrops wash tiny grains of rock together, and make them finer.

Frost splits many rocks, and even wedges off large pieces from cliffs.

Little by little the raindrops, rills, brooks and rivers wash the fine rock or soil down the slopes.

Thus, most slopes are slowly crumbling and wasting away.



21. Beds of Streams. The bottom of a stream is called the *bed* of the stream.

We have seen how rills and brooks carry away soil. Swift rivers often wash tons and tons of sand, pebbles, and even large stones down the slopes.

This rocky matter grinds the beds and thus helps to wear them away.

In some rivers, floating ice cuts the banks and beds. Mud, sand and stones are held by ice, and are carried down the streams. Where does the ice leave its load?

With a hammer break a stone into small pieces. What is the shape of the pieces? Are they rough or smooth?

Put the pieces into a bottle and shake it very hard. See the grains of rock on the bottom of the bottle.

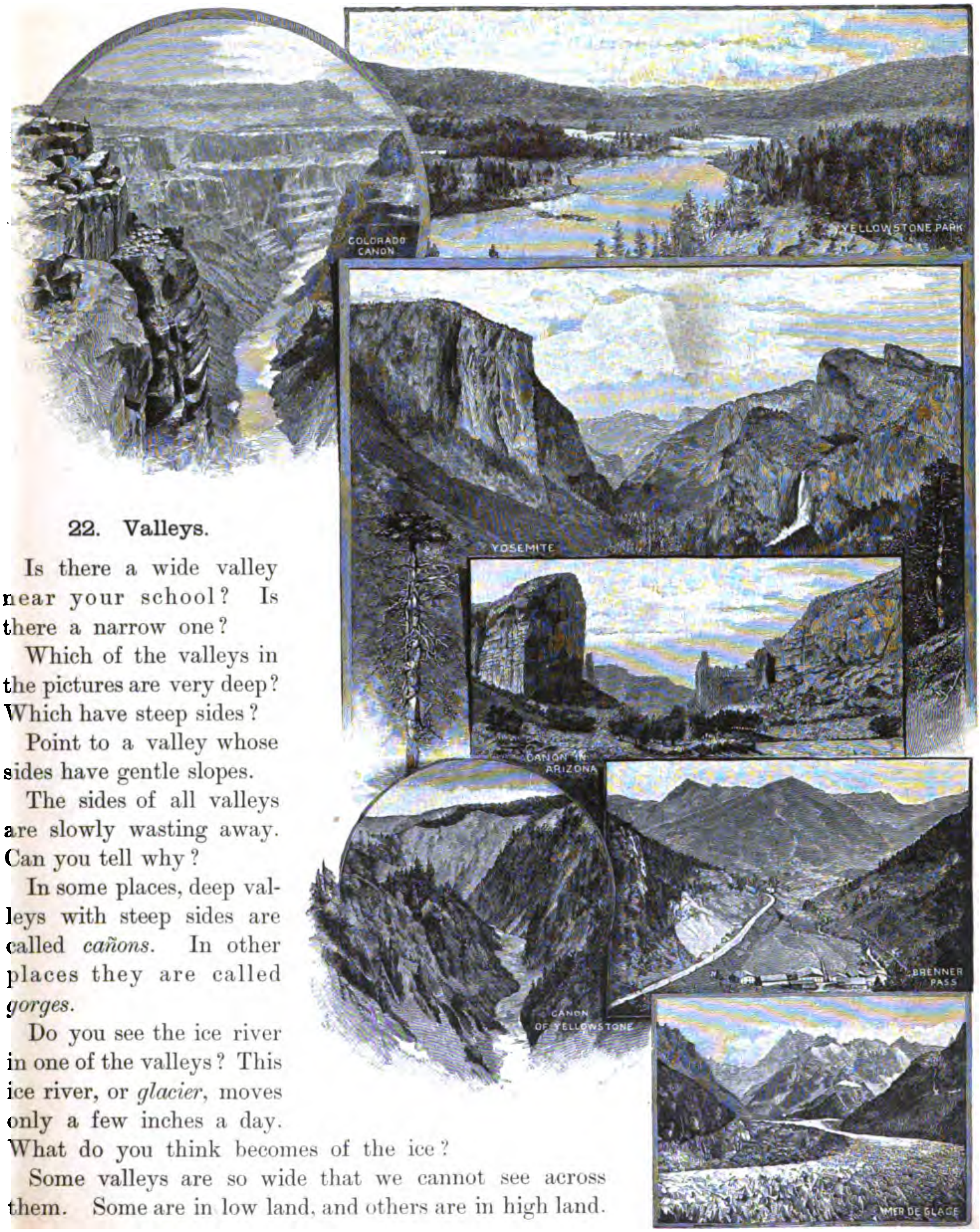
Most of the stones in river beds are round and smooth. Can you tell what rounded them?

A part of the sand in river beds is worn from these stones.

What becomes of the fine particles that are worn off the rocks by rivers? After long ages what will become of the rocks that are now in river beds?

Rivers often wear steep places in their beds. The water leaps down, forming *waterfalls*. A great fall of water over a steep bank is called a *cataract*. A little fall is a *cascade*.

Some of the pictures show water plunging over steep rocks. One shows the rocks back of the falls.



22. Valleys.

Is there a wide valley near your school? Is there a narrow one?

Which of the valleys in the pictures are very deep? Which have steep sides?

Point to a valley whose sides have gentle slopes.

The sides of all valleys are slowly wasting away. Can you tell why?

In some places, deep valleys with steep sides are called *cañons*. In other places they are called *gorges*.

Do you see the ice river in one of the valleys? This ice river, or *glacier*, moves only a few inches a day. What do you think becomes of the ice?

Some valleys are so wide that we cannot see across them. Some are in low land, and others are in high land.

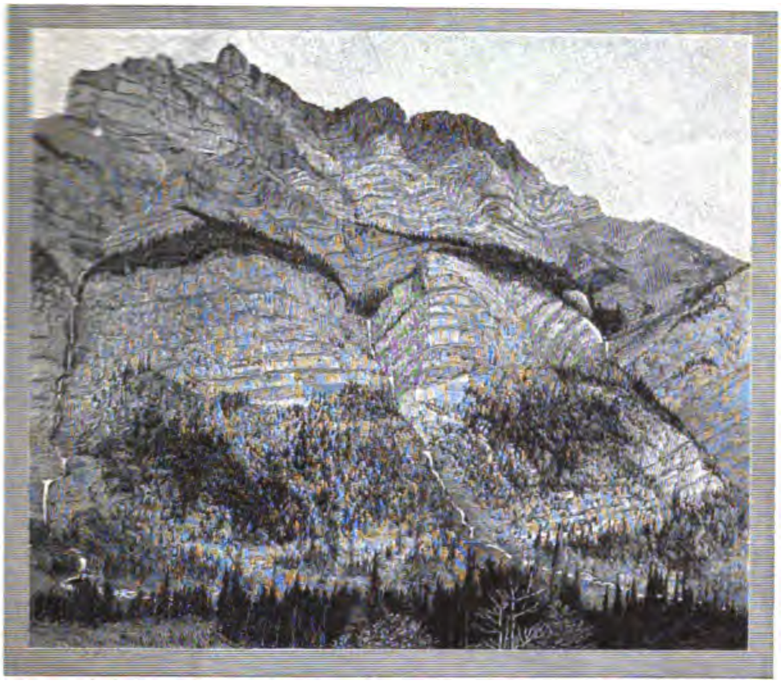
23. Mountains.

Which pictures show mountains with sharp tops? Which show rounded tops?

How does a mountain differ from a valley? How does it differ from a hill?

Most mountains are made of layers of rock that are tilted and bent. The rock is often hidden under a thin coat of soil.

In some places long and deep valleys have been worn in plateaus. The high ridges and points of land that are left standing among such valleys are often called mountains or hills.



Cascade Peak, Rocky Mountains.

For ages and ages, melted rock and ashes have been pushed up from beneath the surface of the earth, or have been blown up by gases. This melted rock is called *lava*.

In many places the lava and ashes are in great heaps that look like mountains or hills. The mouth from which the lava and ashes came, is called a *crater*. A great heap of lava, having a crater, is called a *volcano*. Some volcanoes have deep valleys worn in their sides, and it is thought that these are very old.

A row of mountains is called a *mountain range*. Point to the picture of a low range of mountains having rounded tops.

Find a range with snow upon it. These mountains are so high and cold that snow and ice lie upon them all the year.

Do you think that it would be easy to walk along the divide or top of a range? You would have to climb over the highest points, and cross the notches between them.

The top of a range is called a *crest*. Point as near as you can to the crests of two ranges.

Which crest looks like saw teeth? Which looks like waves?

High points in a crest are called *peaks*. Find six sharp peaks. Find three rounded ones.

Only a few people live on the sides of mountains. The land is rough, and it is hard to make good roads there.

In some places on mountains there is grass enough for cattle and sheep, but the soil is generally very poor. Can you tell why?

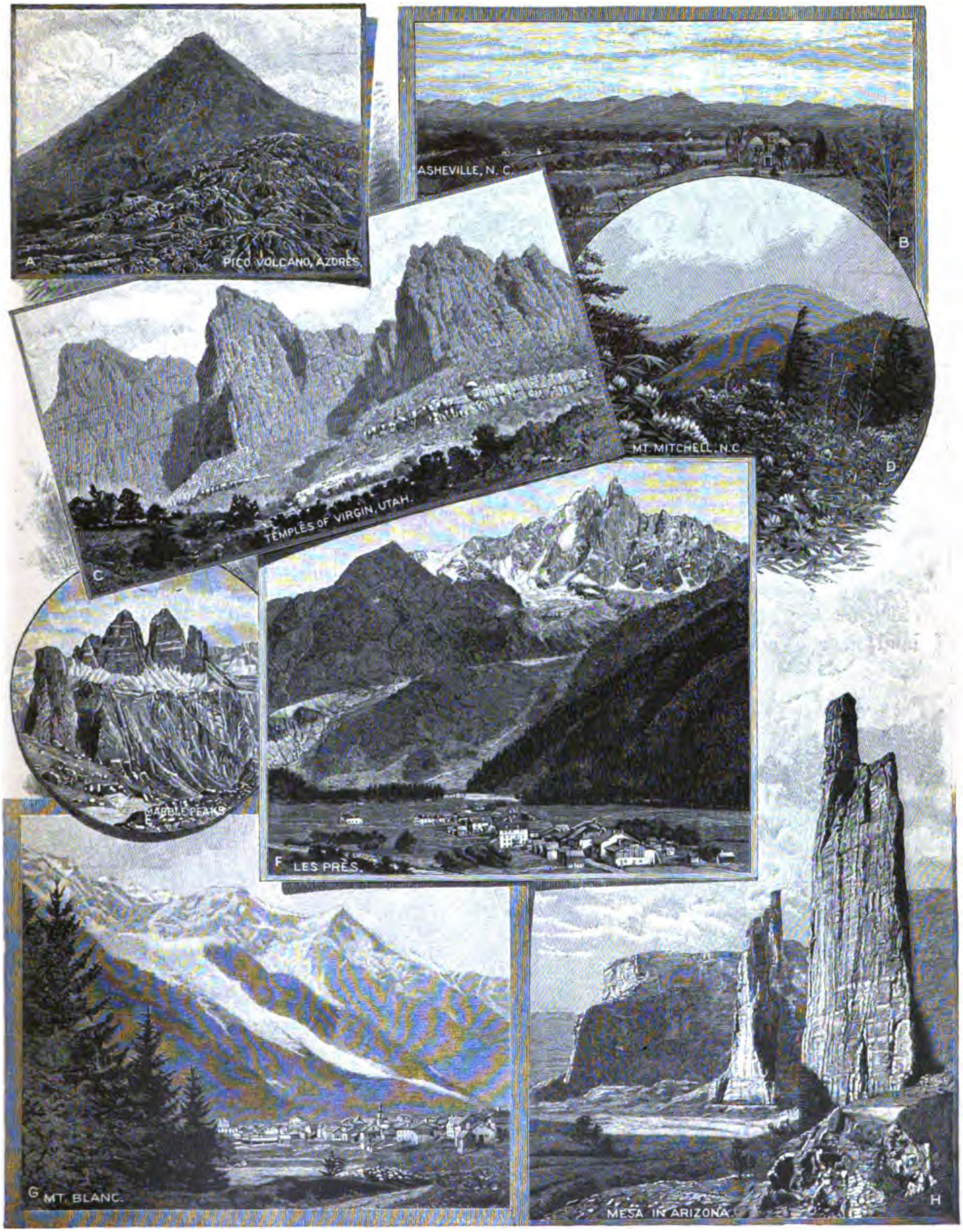
What becomes of the rock that crumbles on steep slopes?

The roads across mountain ranges run through the low places, or *passes*, in the crests. Point to three passes.

Have you heard of the St. Bernard dogs that have saved so many lives in a famous pass?

Many long *tunnels* have been made through ranges. Trains of cars run through some of these, and save many miles of travel over lofty crests.

Some tunnels are cut through solid rock.


A
PICO VOLCANO, AZORES.
ASHEVILLE, N. C.
B
TEMPLES OF VIRGIN, UTAH.
C
MT. MITCHELL, N.C.
D
MARBLE PEAKS
F
LES PRÈS.
G
MT. BLANC.
MESA IN ARIZONA
H

24. Plains.

How does a *plain* differ from a hill? How does it differ from a valley?

How level the land is in the grainfield where the men are at work. Long ages ago this plain was under water.

Find the rocky plain upon which low bushes are growing. Melted rock or lava came up from the inside of the earth and formed this plain. The lava spread out, cooled and hardened.

LAVA PLAIN, IDAHO.

ZAANDAM, HOLLAND.

Which picture shows a level tract of land near a wide river? This plain is made of soil brought down by the river. The water leaves the soil here in times of overflow.

RHINE PLATEAU.

We have learned how brooks form little deltas in ponds. The plain upon which cows are grazing is part of the delta which a river has made in the ocean.

How broad and flat some of these plains are. They look level as far as we can see. There are others that are not so level.

Some plains are so wide that a swift train of cars could not cross one of them in a day.

Find a picture of a high plain. See the deep valleys that are worn in it.

Some high plains are even, and some low plains are uneven, but high plains are generally more uneven than low ones.

High plains are sometimes called *plateaus*. Nearly all plateaus are cut by deep valleys, and are broken by high mountain ranges.

Most of the fertile land is on plains, and here we must look for the chief plants that supply food and clothing.

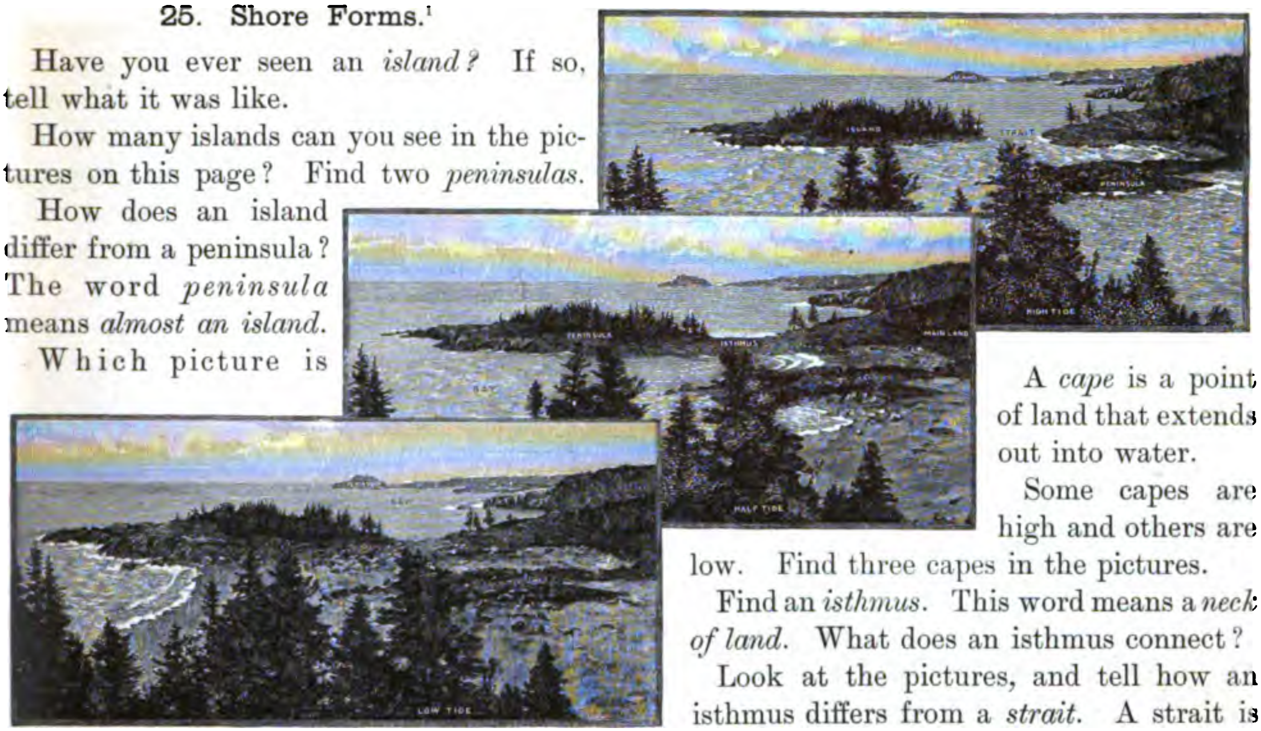
GRAINFIELD, N. DAK.

RHINE FLOOD PLAIN.

On level land it is easy to make roads, to dig canals, and to lay iron or steel rails.

Most people make their homes on plains. Can you tell why?

25. Shore Forms.[1]



Have you ever seen an *island?* If so, tell what it was like.

How many islands can you see in the pictures on this page? Find two *peninsulas.*

How does an island differ from a peninsula? The word *peninsula* means *almost an island.*

Which picture is marked *high tide?* Which is marked *low tide?* How do these two pictures differ from each other? The water in these pictures is a part of the ocean.

Twice each day the water slowly rises on the beach, and twice it slowly falls and lays the beach bare.[2] It takes about six hours for the water to rise, and about six hours for it to fall. This rise and fall of the water is called *the tide.*

Where is the water line at high tide? Where is it at low tide?

A *cape* is a point of land that extends out into water.

Some capes are high and others are low. Find three capes in the pictures.

Find an *isthmus.* This word means a *neck of land.* What does an isthmus connect?

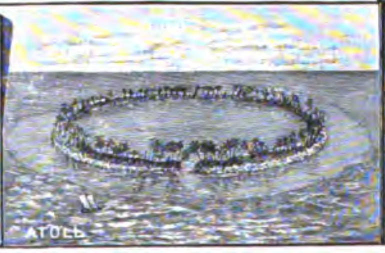
Look at the pictures, and tell how an isthmus differs from a *strait.* A strait is a body of water connecting two larger bodies of water. An isthmus connects two bodies of land with each other.

A long and shallow strait is sometimes called a *sound.* The name *sound* is also given to shallow bodies of water lying between islands and the mainland.

Some straits are many miles wide, and are very deep, but they

ARCH ROCK
LAND'S END

CYCLADES


ATOLL

LAKE COMO

---

[1] Find all these forms on the map opposite the first page of this book.

[2] A few places have only one tide a day, and a few other places have more than two tides.

are narrower than the bodies of water which they connect.

In many places arms of water reach into the land. Some of these are called *bays*, some are called *gulfs*, and others, *seas*.

There are bays, gulfs and seas so wide that swift steamers cannot cross them in a day.

How does a bay differ from a peninsula?

Turn to the picture on page 9. If the tide were to rise into these low valleys, where would it first form islands? Where would it form peninsulas?

Can you find a place where there would be first an island and then a strait? In what parts of the valleys would there be the greatest number of little bays?

26. Work of Water on Shores.

Let us visit the seashore and watch the great waves roll in. How they roar as they tumble over and over! Have you ever bathed in the surf?

What is gravel? Which bank in the picture is made of gravel?

Waves often strike against this bank, and wear parts of it away. Why does the water not make the bank as steep as the rocky cliff?

Where do the pebbles and larger stones on the beach come from?

What becomes of the sand that falls with the pebbles from the gravel cliff?

Find the clay cliff. Where do the large stones on this shore come from? Find a stone on the face of the cliff. When will it fall?

In some places ice rubs against shores and helps to cut and wear them away. Many tons of sand, pebbles and even large stones are held by the ice, and are carried out to sea by it. What becomes of them when the ice melts?

Waves often wash gravel against cliffs, and thus slowly cut them away. Frost splits and loosens the rocks.

Can you see the place where a part of a cliff has lately fallen? What will become of the loose earth at the foot of the cliff?

Can you tell what made the caves in the middle cliff?

Find the picture which shows surf breaking over rocks. This rocky ledge was once a part of the main shore. After a long time the waves may wear away the whole ledge.

The island in the calm sea is like a low hill round which water has flowed.

Have you ever seen seaweed growing on rocks? Which do water and gravel wear away more quickly, bare rocks or those which are under seaweed?

In some places the sand and pebbles that are worn from soft cliffs and beaches spread out and make the water shallow along the shores.

Great waves that roll in from the sea often strike upon shallow bottoms, and wash sand and pebbles up onto the beaches. In some places the wind then blows the sand into drifts, like snow, and carries it far inland.

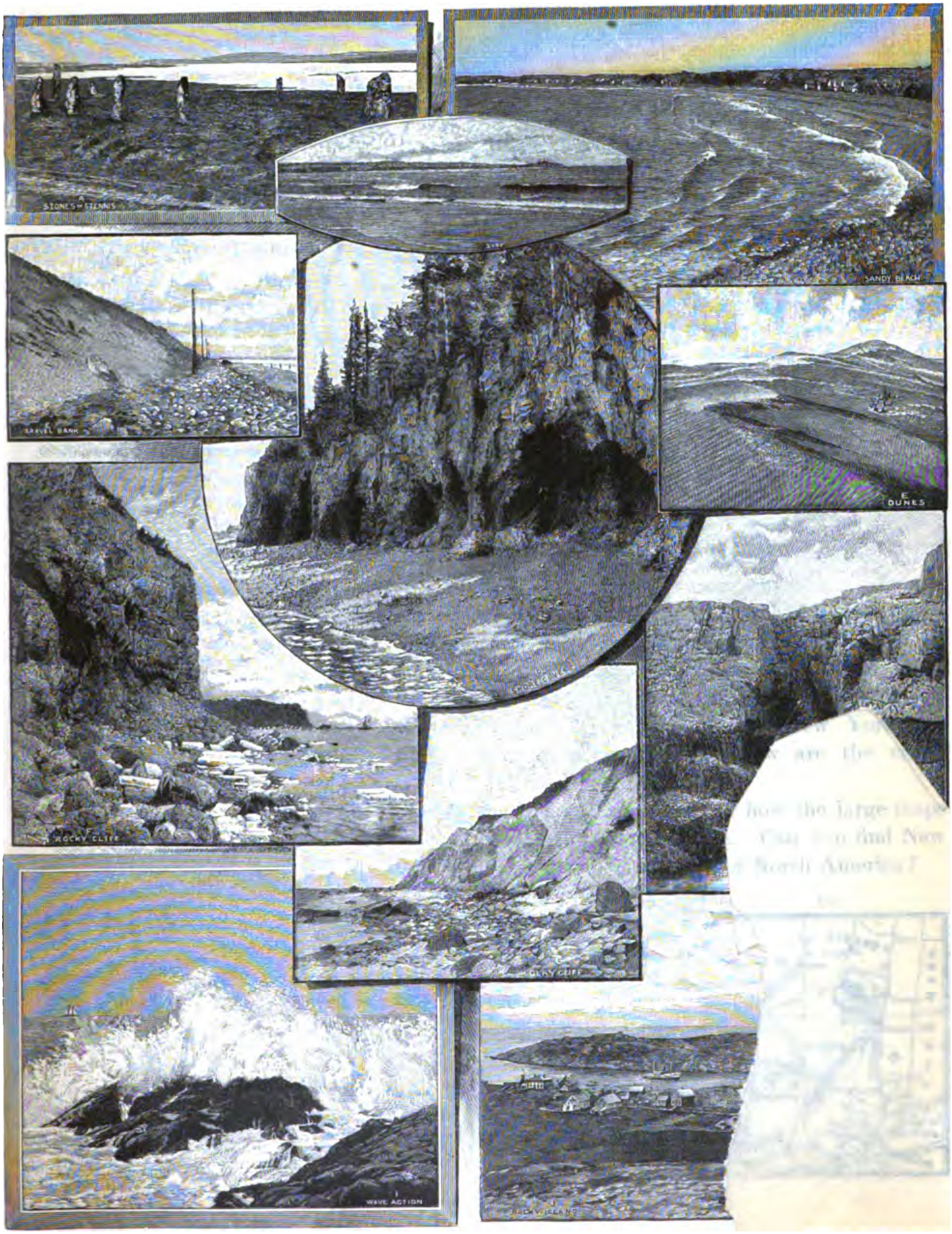
Plants sometimes grow in beach sand, and keep it from drifting. Which picture shows a low, grassy shore?

An arm of the sea, or of any other body of water, in which ships find shelter from storms, is called a *harbor*.

Some harbors are made by building long walls out into the water. These walls break the force of the waves.

The best harbors have deep water and high shores. Can you tell why deep water is needed? Of what use are the high shores?

Should you expect to find the best harbors on rocky coasts, or on sandy ones?


A
STONES OF STENNIS
SURF
B
SANDY BEACH
C
GRAVEL BANK
E
DUNES
F
ROCKY CLIFF
CLAY CLIFF
I
WAVE ACTION
J
ROCKY ISLAND

27. Points of the Compass.

Point to the place where the sun rises. How often does it rise?

Where is the sun at noon? Where does it set?

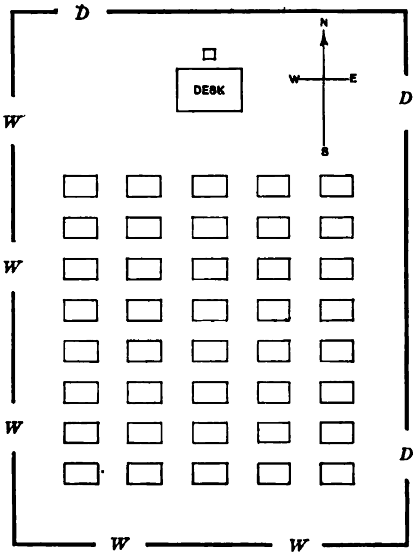
Try to find out at what time of day your body casts the *shortest* shadow on level ground.

At midday all shadows point *north,* away from the objects that cast them.

Turn your face to the north. Are there any trees, hills or houses north of you?

Turn your back to the north. You are now facing *south.* Name some objects that you can see south of you.

When you face the north, *east* is on the right, and *west* is on the left.



Plan of a Schoolroom.

The sun rises in or near the east. It sets in or near the west. Point to the east, and then to the west. Name some objects that are
east of
me some that are west of you.

Which is the *north*
side of your school-
house? Which is the
outh side?

Name a building or
ny other object that
s north of your home.
Can you name a street
or road that runs east
and west?

een north and east.
ortheast. It is often

r *northwest?* For
Can you name
east and south-

28. How Maps are Made.

How long is the top of your desk? How wide is it?

Draw the top of your desk, making the drawing one eighth as long as the desk.

How long is the schoolroom? How wide is it?

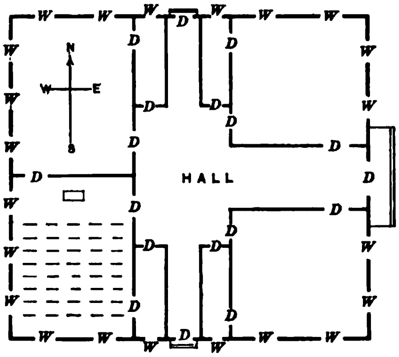
Draw the sides and ends of the floor. Let one half of an inch on the paper stand for one yard on the floor.[1] Put all the desk-tops in the drawing.

This picture of a schoolroom will show you how to draw yours.

Draw the room again, and let one eighth of an inch stand for one foot. Mark places for windows and doors.

Make a drawing or *plan* of the lower floor of the whole building. Use one fourth of an inch for each yard.[2] Make lines to show where all the walls are placed. Mark places for doors and windows.

Draw a plan of the same floor, using one eighth of an inch for a yard.



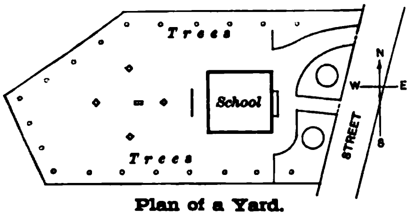
Ground Plan of a Schoolhouse.

---

[1] If the room is very large, allow one fourth of an inch for a yard.

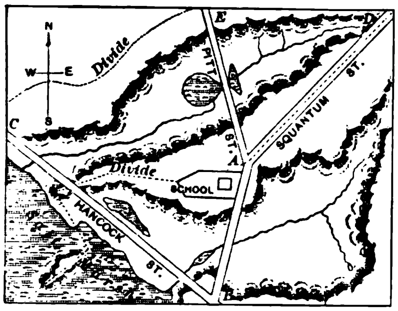
[2] In some cases, teachers may find it necessary to name scales, differing from those given.

Make a plan of the school yard. Allow one inch for twenty-five feet. Draw lines for the walks and gates. Make dots for trees. Mark the place where the schoolhouse stands.



Plan of a Yard.

A plan of any part of the earth is a *map*. Here is a map of a school district. One eighth of an inch was used for fifty yards. On page 8 there is another kind of map of the same district. It is called a *relief map*.



A School District.

Make a map of a part of your school district.[1] Put in it the brooks, ponds, hills, streets and shores, if there are any.

You can measure distances by counting the number of steps it takes to travel each distance. Call each step a *pace*.

29. Reading Maps.

Let us study these four small maps, and learn what they show.

Find in map I. the City Hall and Post Office. It takes about two minutes to walk from one of these buildings to the other. This map includes a few streets in the city of New York.

The next map shows the rivers on two sides of the city, with wharves all along the water front.

Can you find the City Hall in map II.? Why is it drawn so small? See how narrow the streets in this map are made.

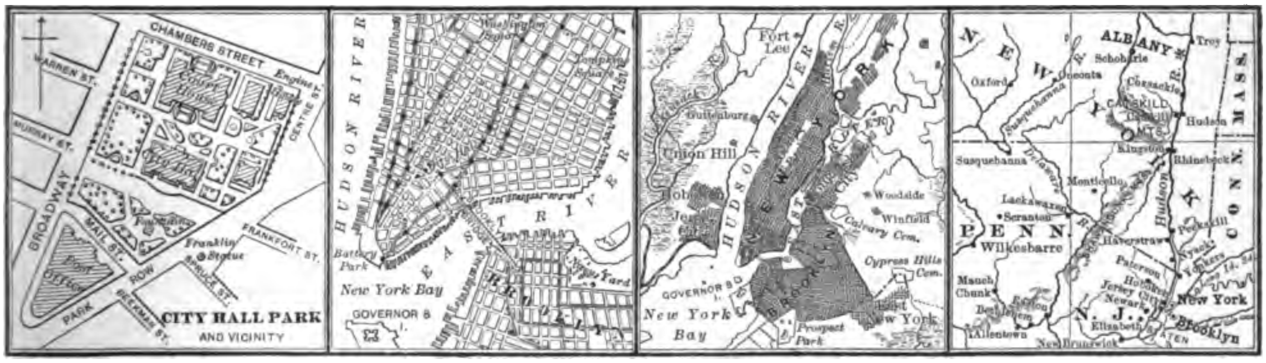
Map III. includes several cities. In this map the streets are shown by very fine lines. The buildings and wharves no longer appear. See how far New York extends up the Hudson river.

Can you find New York on map IV.? Where is Albany? The distance from New York to Albany is more than a hundred miles.

What river flows from Albany to New York? Where are the Catskill mountains? Where is Brooklyn?

Why are the streets of New York not drawn on map IV.? How are the rivers shown on this map?

These little maps show how the large maps in this book were made. Can you find New York on the large map of North America?


I. II. III. IV.

Maps of New York and Vicinity.

---

[1] If pupils cannot go outdoors to make a map of their district, the different members of the class can doubtless furnish enough facts for making a simple map indoors. City pupils can make a plan of a park, or of a few blocks or squares near their school.

THE EARTH.

30. Form and Size of the Earth.

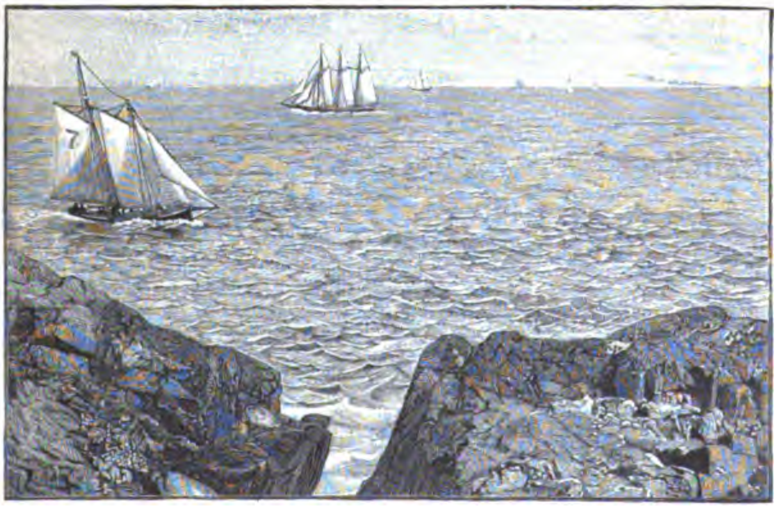
The line on the earth where earth and sky seem to meet is called the *horizon*.[1] The horizon surrounds us on every side.

Soap Bubbles.

Were you ever on a high hilltop? If so, did you see the same horizon that you could see from the lower land?

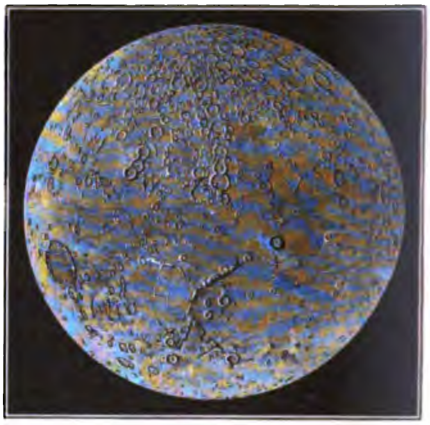
Which picture shows vessels going to sea?

You can look over the masts of one vessel, and see the water beyond. Another is sailing out of sight. Only the sails can be seen. The hull is below the horizon.



Ships on the Horizon.

Can you see the smoke of the steamer that is below the horizon? If the earth were flat, could vessels go out of sight in this way?



Map of the Moon.

Here is a map of the moon.

Find the long ridge just below the middle of the moon. This ridge is a mountain range. It is so long that it would take a swift train of cars all day to run from one end of it to the other.

Have you ever blown soap bubbles? How pretty the little *globes* look as they float away. When the moon is pale and round, does it look like a great bubble?

If we were far off in the sky, the earth would appear like a great moon.

The moon is a very large ball, but the earth is many times larger. We see so small a part of the earth at a time that it does not look round like a ball.

What is the form of the earth in the picture on the first page?

The greatest distance round the earth is about 25,000 miles. The greatest distance through it is about 8,000 miles.

---

[1] This line is often called the ***skyline***, and the name *horizon* is applied to the circular skyline, as seen on the ocean.

31. What a Hill is Made of.

This picture shows a deep cut on the side of a hill.

Point to the solid rock.

What rests upon the rock?

Upon what does the water flow?

What is sand? What is clay?

Of what is the hill in the picture made?

What is a pond? What flows in all streams?

Have you ever seen any part of the earth that is not made of rock or water?

What do we breathe? What is wind?

Where do clouds form? What comes from clouds?

Where does rain go?

32.

What the Earth is Made of.

By far the greater part of the earth is a ball of rock. This great ball is not smooth. Hills, mountains, plateaus and valleys make rough places on its surface.

The lower parts of the surface of the rocky ball are covered with water. The parts that are above water are called *the land*. You can see the land all about your school.

We have learned that for ages and ages rocks have been decaying, and streams have been washing a part of the fine rock down to the lowlands.

In most places there is a thin layer of fine rock, or soil, over the solid rock.

Salt water covers about three fourths of the surface of the earth. The other fourth of the surface is land.

What is under the water?

If we picture the earth about the size of an apple, the water will form a layer about as thick as the peel of the apple. You must not think that the water is really a *thin* layer. The earth is very large, and in places the water is four or five miles in depth.

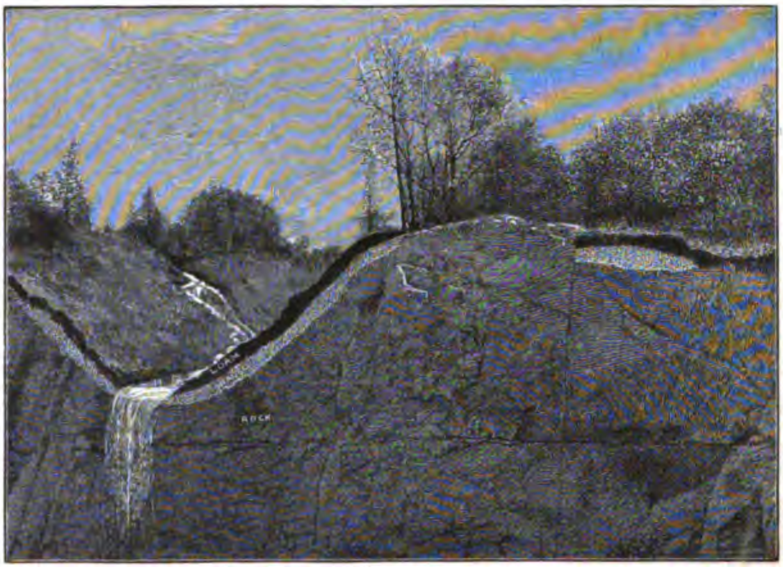
33. The Air.

Drop a small piece of paper. How did it move? Why did it not fall straight down?

Drop another piece. Did it fall like the first? Can you make two pieces fall in the same place?

Can you see the air? Can you feel it? Swing your hand in the air.

These words may help you to think of some of the uses of air: bird, ship, windmill, rain, breath, balloon, plant, wave.



Section of a Hill.

34. The Shell of Air.

We live and move in the air. [illegible]l it about us, we breathe it, and set it a[illegible]k to drive ships and to turn windmills.

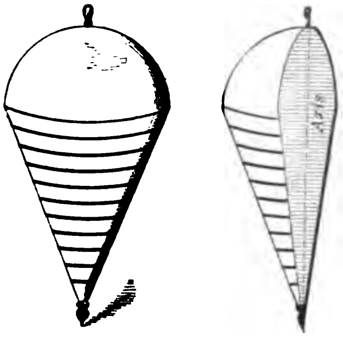
How gentle the air is when calm. How strong it is in angry gales.

We do not know how far the air extends above us, but we do know that the upper air is very thin. If we should go up only three miles, many of us would suffer for breath.

The air forms a shell round every part of the earth.

35. The Poles.

Find the dotted line in the top. It runs from the head to the peg. When the top spins, every part turns round this line.

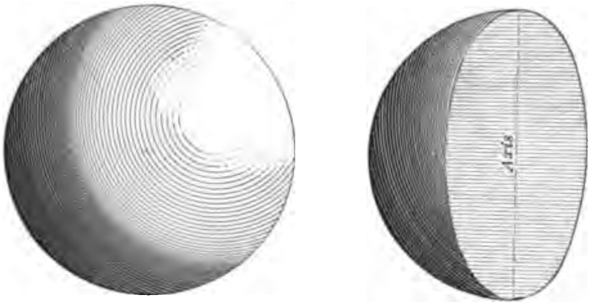


We will call this line the *axis* of the top.

The earth has no head nor peg, but it spins like a top. It takes a day and a night to turn once round.

We may *think* of a line in the earth like that in the top. It is called the *axis* of the earth. Once in twenty-four hours every part of the earth turns round the axis.

The ends of the axis are called *poles*. The word *pole* means *pivot*, or point upon which anything turns.

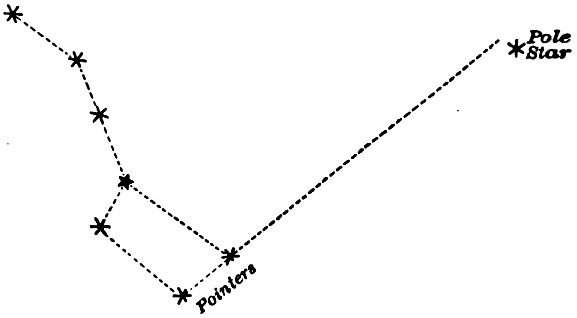


The earth seems to float in the sky. It turns on its axis, just *as if* the poles (or ends of the axis) were pivots; but, of course, the earth does not rest upon anything.

When you go out to play, toss up a ball and make it spin in the air. As the ball spins, try to tell in what direction its axis points.

Can you find the *north star?* Point to the place in the sky where it shines.

The axis of the earth points to the north star. The end of the axis under this star is called the *north pole*. The other end is the *south pole*.



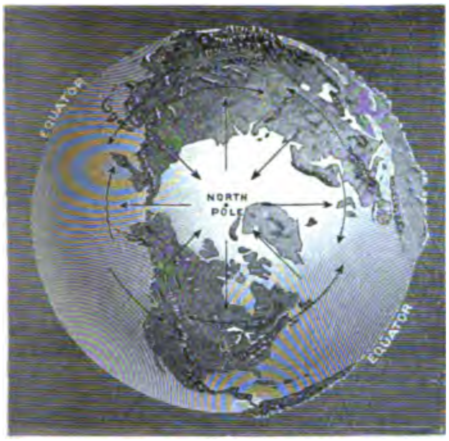
If you were at the north pole you could see the north star over your head. The north star is often called the *pole star*. Can you tell why?

The land and water about the poles are buried under ice and snow. Many polar bears and seals are found in the frozen regions of the north. Upon what do the bears feed?

From every place on earth, *north* is towards the north pole. *South* is towards the south pole.

Lines are often drawn from pole to pole on maps. All such lines run north and south.

Polar Scene.



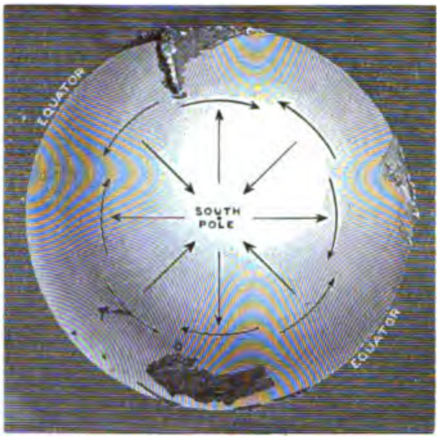
Map A.

How many arrows on map *A* point north? How many point south?

Which arrows point north on map *B*? On map *C*?

Which arrows point south on map *B*?

On map *C*?



Map B.

36. The Equator.

We may think of a line drawn round the earth, halfway between the poles.

This line is called the *equator*.

It divides the surface of the earth into two *equal* parts. Find the equator on the map.

The lowlands near the equator have no winter. The hot or warm season lasts all the year.

The equator extends east and west. Other lines may be drawn in the same directions. When we face the north, *east* is along the lines to the right, and *west* to the left.

Scene near the Equator.

Which arrows on map *A* point east? Which point east on map *B*? On *C*? Which arrows point west on map *A*? On map *B*? On *C*?

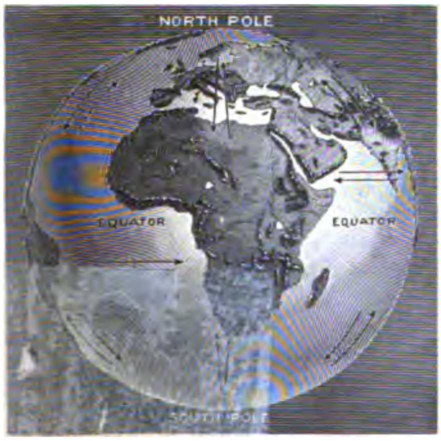
Find the north pole in map *D*. Which lines in this map run east and west? Which north and south?

When we face the south pole does east follow the arrows to the right or to the left, round the pole?

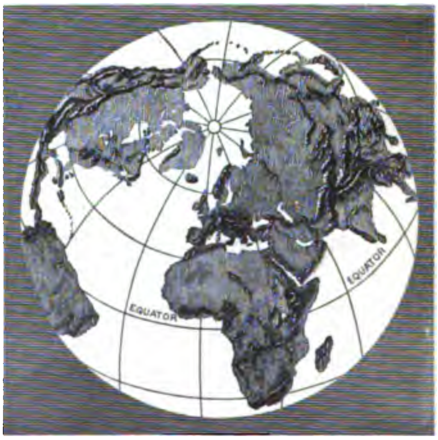
As the earth turns slowly on its axis, one side is light and the other side is dark. One side has *day*, and the other has *night*.

Which side of the earth is light? When will that side be dark?

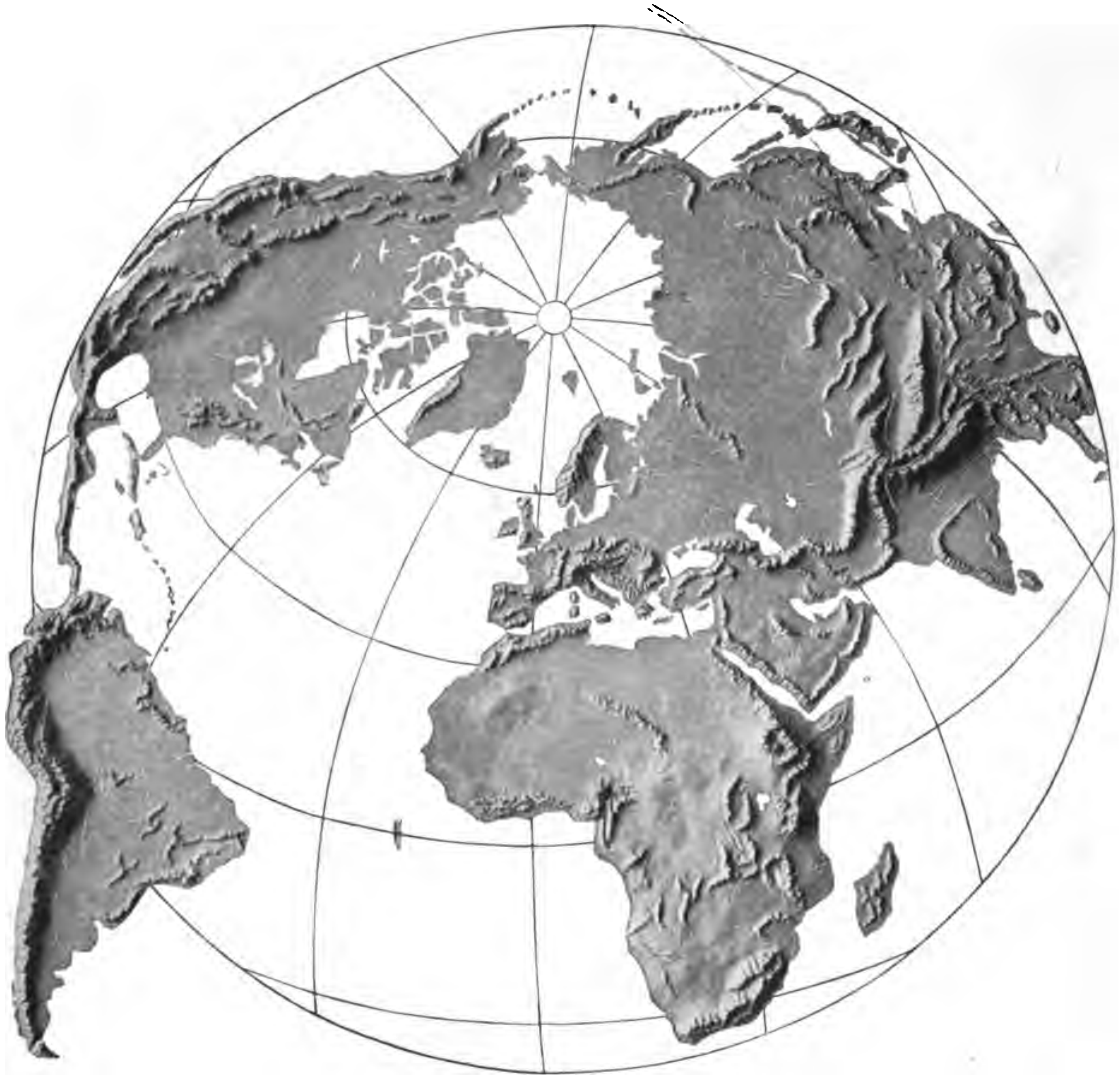
What part of a ball can be lighted by one lamp? How large a part of the earth can be lighted by the sun at one time? The earth turns from west to east, and the sun is therefore first seen in the east.



Map C.



Map D.



SLOPES OF THE EARTH.

37. The World Ridge.

Four long highlands form a loop that bends nearly round the earth. We will call this loop of high land the *world ridge*. Find it on the map.

The world ridge is not sharp, like the roof of a house. In many places it is hundreds of miles in width. The greater part of it consists of wide plateaus.

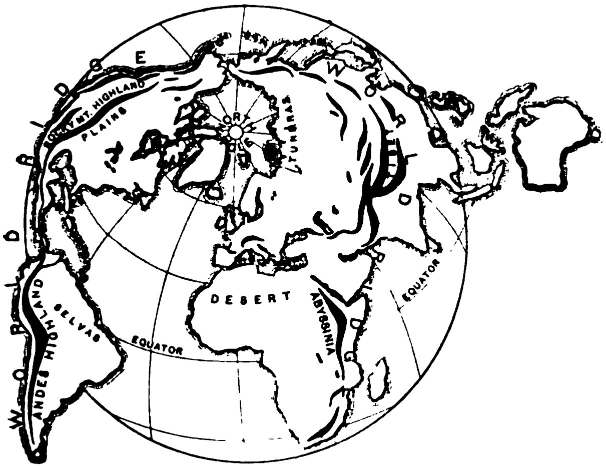
The world ridge is shaped like a horseshoe.

On which side of the equator are the ends of the world ridge?

In how many places does the equator cross the world ridge?

Near what part of the world ridge is the north pole?

Make on the map a dot in the place where you live. Your teacher will show you where to make it.



Key to Relief Map.

38. Andes Highland.[1]

In what part of the world ridge is the Andes highland? In what direction does it extend?

The Andes highland reaches one fifth of the distance round the earth. It consists of a long and narrow plateau, with many ranges of mountains.

Some of the peaks of the Andes are so high that snow lies on them all the year.

On which side of the Andes are the great plains?

A very useful animal, called the *llama*, is found in the Andes. This little beast sometimes carries loads on its back over the mountains.

The llama has a thick pad on the sole of each foot, and is well fitted to climb steep rocky paths.

A few years ago, long trains of llamas often went winding down the mountain sides, with loads of *silver ore*,—the rock from which silver is taken. On the return trip the llamas carried food, clothing and tools to the people who lived far above the coast.

Cars and mules now carry most of these goods.

Outside the World Ridge.

39. Rocky Mountain Highland.

Where is the Rocky Mountain highland? In what direction does it extend?

This mass of land is about as long as that of the Andes.

Which of these highlands looks wider than the other? Which looks the higher?

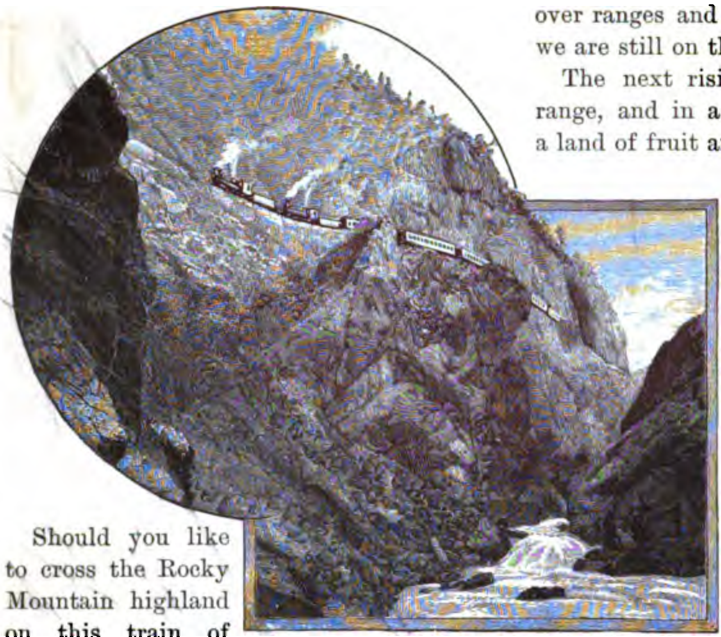
The Rocky Mountain highland consists of a wide plateau, broken by lofty ranges, and cut by deep valleys.

The main range is called the *Rocky mountains*.

Llama.

---

[1] The lessons in small type, in connection with pictures, are for supplementary reading. The more important text is in large type.



Crossing the Rockies.

Should you like to cross the Rocky Mountain highland on this train of cars? How the iron horse must puff on the steep slopes!

In some places the track winds along the bottoms of deep cañons, and crosses long bridges far above rushing streams. In the high ranges, and even along the plateau, the road is often blocked with snow.

Many of the sights are grand. The train whirls round lofty points from which may be seen mile after mile of rugged peaks, and it glides into wide valleys which seem alive with cattle and sheep.

Hour after hour the train rushes on its way. Night comes on, but even while we sleep the cars speed over ranges and through valleys. The sun rises and sets, and we are still on the great world ridge.

The next rising sun finds us on the crest of the border range, and in a few hours we drop from snowy passes into a land of fruit and flowers.

Kilima-N

40. Highland of Tibet.

Find on the map the highland of Tibet. In what direction does it extend?

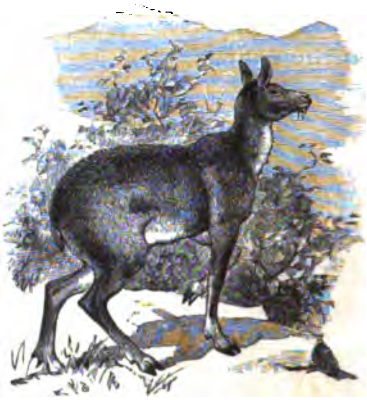
This mass of land is the highest on earth. Some of its snowy peaks rise about five miles and a half above the level of the sea.

On which side of Tibet are the longest plains?

The musk deer lives far up on the highland of Tibet. See how large its toes are. When the lively little creature leaps from rock to rock, its toes seem to grasp the sharp points.

The musk deer feeds on moss and grass that grow far up on the ranges.

Thousands of these creatures are killed every year for the little sacs of musk that form beneath the skin. This musk is used in making perfumery.



Musk Deer.

41. Highland of Abyssinia.

The fourth great mass in the world ridge is called the highland of Abyssinia. Show on the map where it is.

In what direction is Abyssinia from the end of the world ridge that is nearest it?

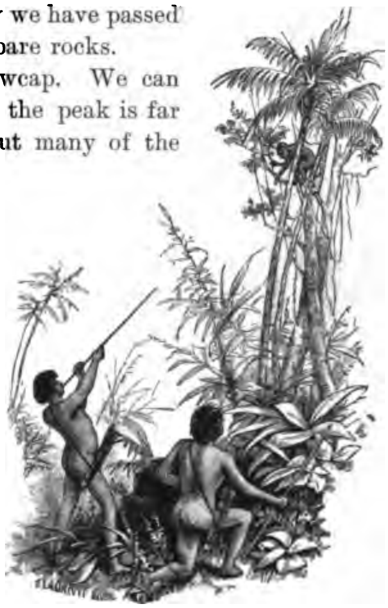
Let us try to climb this high mountain. It stands near the equator, a little distance south of Abyssinia.

Large banana plants and palm trees grow at the foot of the mountain.

Up we go! Now we can look far out over the lowlands. The air is cooler. See the great trees with moss growing on their trunks and branches.

At length we reach grassy places and clover patches, on the mountain sides. Now we have passed the clover, and find only bushes and bare rocks.

Here is the edge of a great snowcap. We can climb no farther, and yet the top of the peak is far above us. This peak is very high, but many of the peaks in the highland of Tibet are much higher.



Natives of the Selvas.

42. Slopes from the World Ridge.

Each of the four great highlands sends out a long slope on one side, and a short slope on the other side. The long slopes are inside the world ridge. In most places they make wide plains before reaching the level of the sea.

The slopes outside the world ridge are shorter than those inside. In most places the short slopes form only a narrow lowland along the shores.

43. Selvas.

Vast forests, called *selvas*, cover a large part of the slope east of the Andes highland. Long rivers wind through these forests and often overflow the land.

Find the word *selvas* on the map on page 25.

Many tribes of Indians live along the borders of the streams. They spend their time catching fish, and shooting birds and small animals.

Is the air cold or is it warm in the place where these Indians live?

Cattle Ranch on the Western Plains.

44. Western Plains.

Where is the Rocky Mountain highland? What have you read about this part of the world ridge? On which side of the Rocky mountains is the long slope?

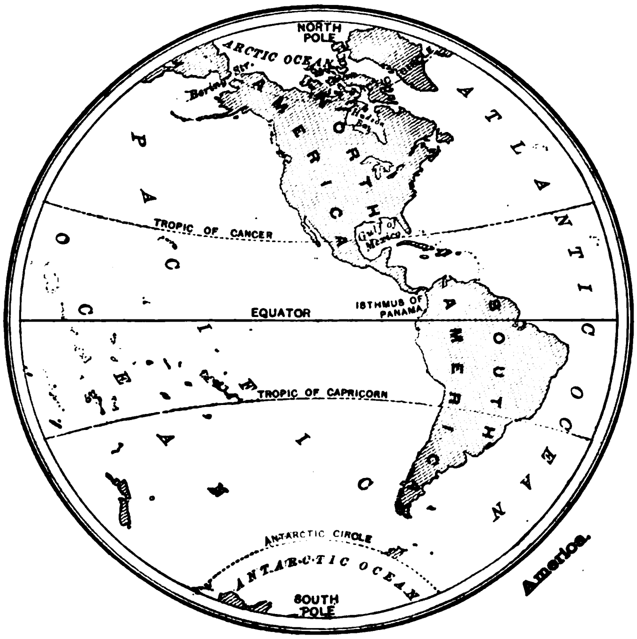
A very large part of this slope consists of wide *plains*. In some places they are barren, but in other places they are covered with grain and cotton.

Just east of the Rocky mountains the grassy slopes feed large herds of cattle. These grazing plains stretch away for hundreds of miles. Perhaps some of the meat which you have eaten came from these plains.

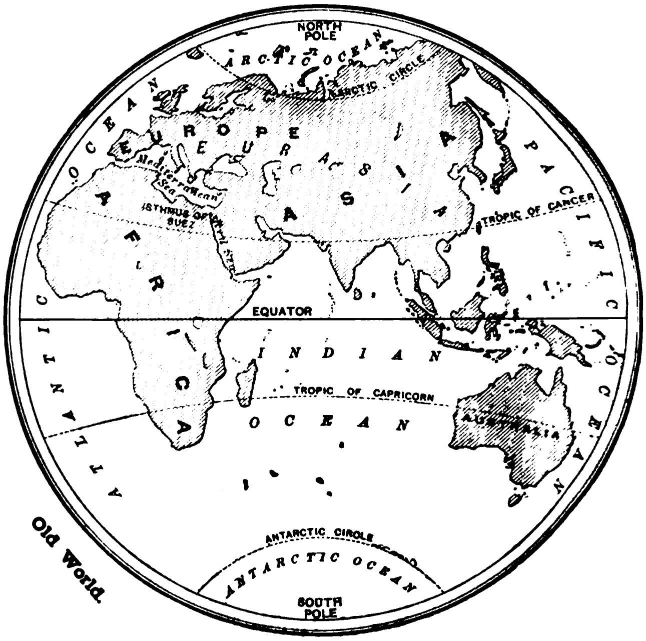
45. Tundras.

Find the word *tundras* on the map. The tundras are marshy and mossy plains that form a part of the long slope far to the north of Tibet. They lie along the shore of a very cold sea. In most places the soil of the tundras is frozen to a great depth. In summer it thaws slightly at the surface.

Herds of *reindeer* feed on a small gray plant, called *reindeer moss*, that grows on the tundras. On page 81 there is a picture of these dreary plains. South of the tundras there are large forests and grassy slopes.



America.



Old World.

46. Desert of Sahara.

Find on the map on page 25 the place marked *desert*. On pages 49 and 52 there are pictures of parts of this desert.

Have you ever seen any land like that in the pictures? How does it differ from the land near your school?

The desert is very dry, and most parts of it are covered with sand. Perhaps the little children there never saw any rain.

South of this dry land there are long rivers flowing through dense forests and over grassy plains.

47. The Grand Divisions.

What strait cuts across the world ridge?

Where is South America? Where is North America? What isthmus joins these two parts of America? Which part is the larger?

What lands are joined by the isthmus of Suez?

Where is Europe? Which is the larger, Europe or Asia?

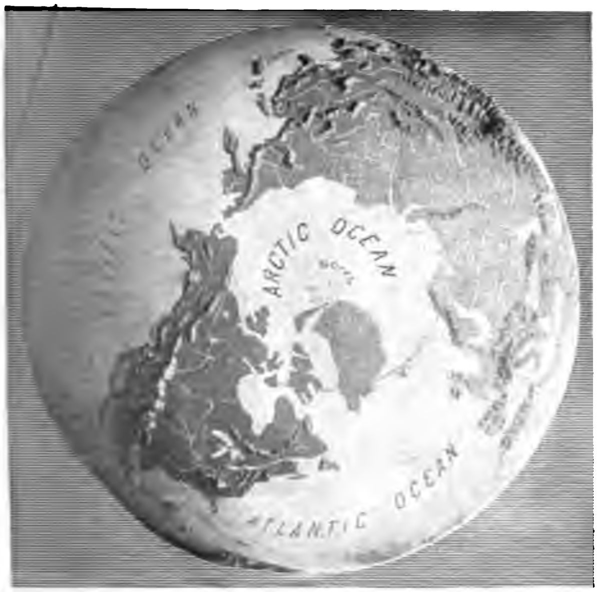
What very large island is southeast of Asia? Which looks the larger, Europe or Australia?

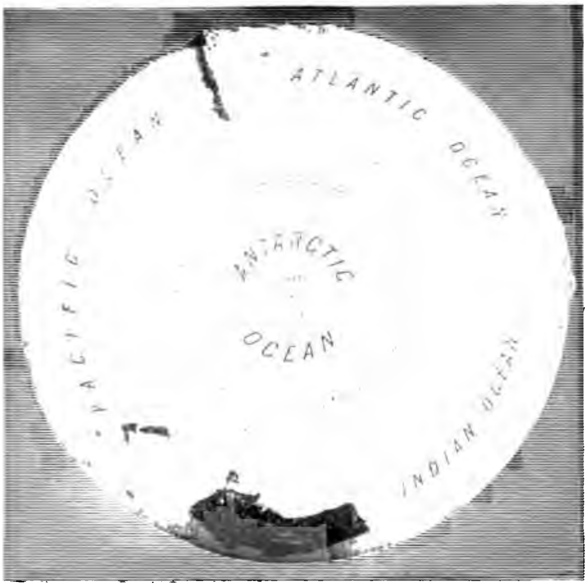
What lands are crossed by the equator? On which side of the equator is the greater part of the land? On which side is the greater part of the sea?

Which of these large bodies of land lie wholly north of the equator? Do any lie wholly south of the equator?

South America, North America, Europe, Asia, Africa and Australia are called *grand divisions* or *continents*.

What grand divisions are in the Old World?





48. The Oceans.

The sea, or ocean, covers nearly the whole of one side of the earth, and also a large part of the other side.

What name is given to that part of the sea which is round the north pole? To the part round the south pole?

What ocean is east of America? On which side of the Old World is the Atlantic ocean?

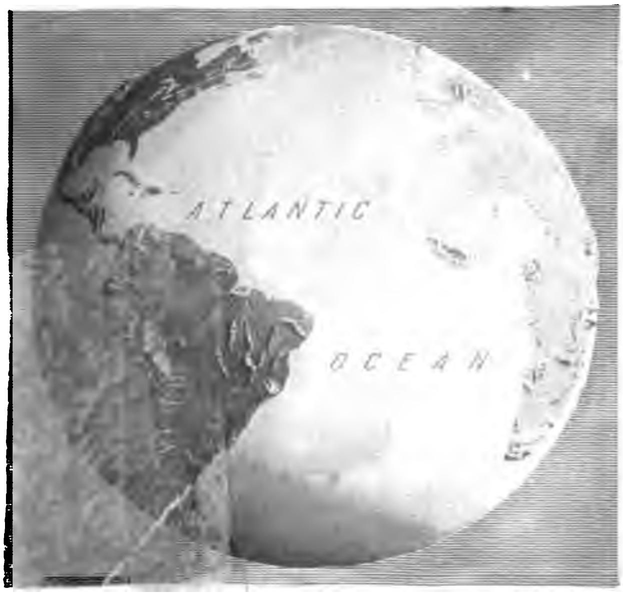
What ocean is west of America? On which side of the Old World is the Pacific ocean?

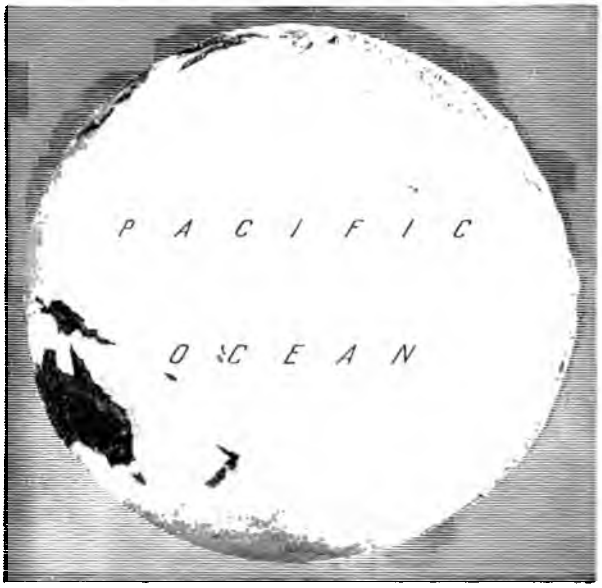
What ocean is south of Asia? What land is west of the Indian ocean? What land is east of it?

What lands border on the Pacific ocean? On the Atlantic ocean? On the Arctic ocean?

What oceans touch the shores of North America? Of Asia? Of Australia? Of Africa? Of South America?

Which is the largest ocean? Next in size?





49. The Bottom of the Sea.

In some places there are very long and wide banks under the sea. The tops of many ranges and ridges also rise above water, and form islands.

Many volcanoes rest upon the bottom of the deep sea. Their peaks form hundreds of lonely islands, far out in the ocean. Most of these volcanic islands are in the Pacific ocean.

By far the greater part of the bottom of the sea is a vast smooth plain.

Sunlight does not go very far down in the sea. If we were to sink in this great body of water, we should find the light growing fainter as we went deeper. At less than one fourth of a mile below the surface, the ocean is always in darkness. Yet, in some places, the water is five miles in depth.

Near the surface of the sea, and on the bottom, there are many kinds of fish and other creatures. At times the shallow water near the shores of the grand divisions seems to be alive with fishes.

50. Coral Islands.

(A Reading Lesson.)

Have you ever heard of the pretty islands that grow in the sea? Let us visit one of them, and find out how it grew.

The water round the island is clear, and we can look far down into it. What are those little branches that grow under the water? Reach down with a long pole, and break off a branch.

It looks like a small tree, but it is as hard as stone. There are tiny soft spots on the sides and ends of the branch.

This is one of the wonders of the sea. Each soft spot is a living body. It has a mouth and a stomach, and takes its food from the water.

This tiny creature is called a *polyp*, and the hard part is *coral*. The coral is a part of the body of the polyp.

Some polyps grow like trees, and send out buds that form branches. The polyps on the branches bud again, and thus a dense coral forest grows.

Polyps lay tiny eggs in the water, and the eggs float and swim. If they reach a rocky bank or a hard bottom where the water is shallow, clear and warm, they start another forest of coral.

When the coral has grown nearly to the surface of the sea, waves break off many branches and wash them onto the top of the coral mass. Each storm sends up more, till the bank rises above the water and forms an island.

The waves soon grind some of the coral to powder. Sea-plants drift to the new shore, and mix with the coral dust. Soil is thus formed on the island.

Fine seeds are carried many miles by winds in storms. Other seeds drift with the sea from shore to shore. In some such ways seeds reach the new island, and grow to trees or smaller plants. Now the coral island is ready for man to come and make it his home.

In the warm parts of the ocean, polyps have made many long banks, or *reefs*, along the main shores.

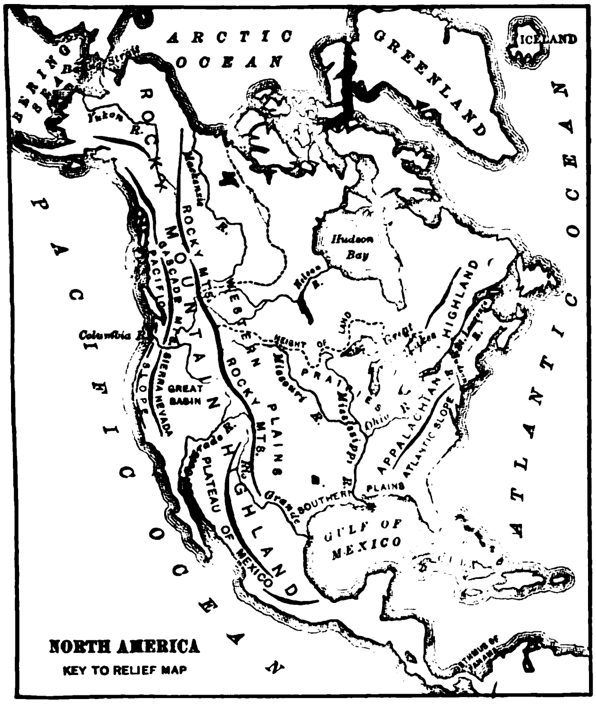
Ships often strike upon these reefs, and are wrecked.[1]

There are many kinds of coral, and they take many pretty shapes.[2]

---

[1] The famous war vessel, *Kearsarge*, was wrecked on a coral reef.

[2] It is often stated that islands like that in the picture are built upon other sinking islands. It is now thought that this has taken place only in rare cases, if in any.

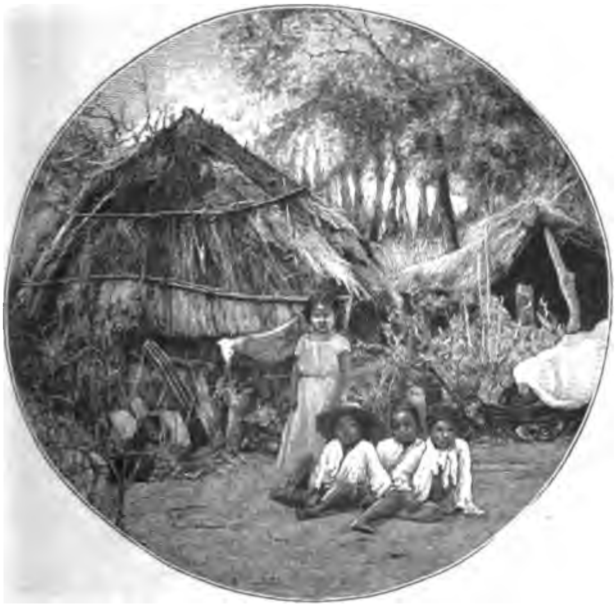


58. Map Studies.

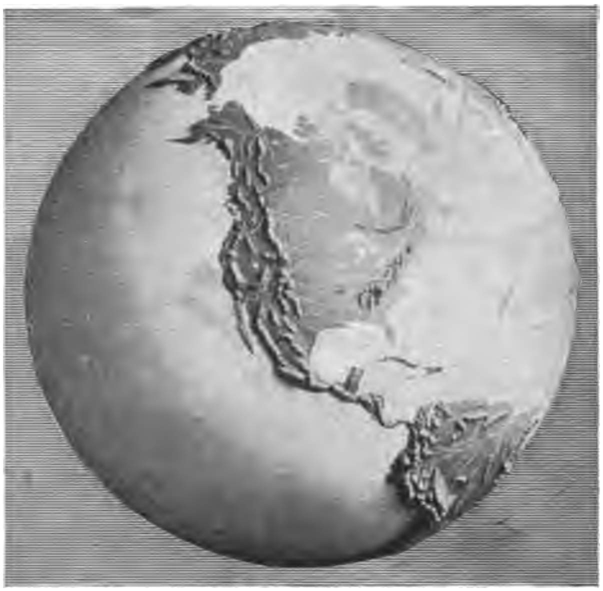
Find on the map the place where you live.

What oceans border on North America?

Which part of the world ridge is in North America? Along which coast does it lie?



Mexican Children



What does the relief map tell you about North America?

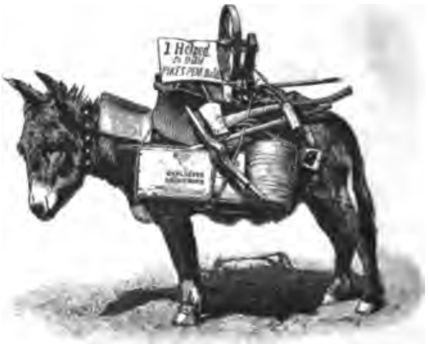
The children in the picture live on the plateau of Mexico. Can you tell whether their home is in a warm place or in a cold one?

What kind of clothing do these children wear? Of what are the huts made?

This picture shows only country life. On some parts of the plateau of Mexico there are large towns and cities.

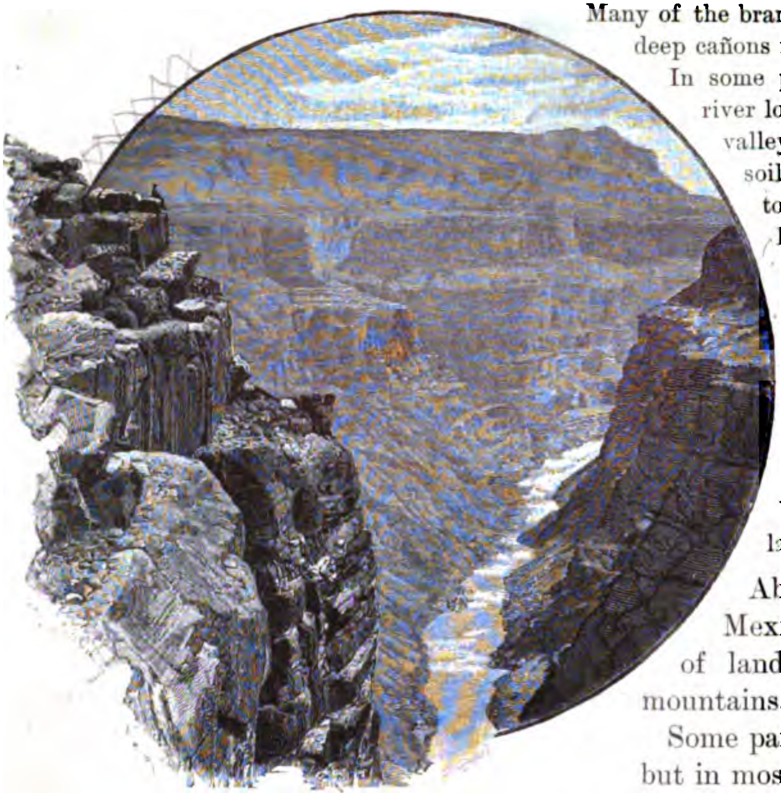
59. The Rocky Mountains.

Where are the Rocky mountains? In what direction do they run?



The lofty range of the Rocky mountains runs along the eastern border of a part of the world ridge.

Do you not think that this is a very heavy load for a little animal? What tools has he on his back? Can you tell what each tool is used for?



Cañon of Colorado.

Do you remember our long ride in the cars across the world ridge? We climbed into high passes, and rode through deep cañons. In places the road led along the sides of steep cliffs and across long bridges. Of course no wagons could cross those rough places.

Here the little donkey proves his worth. He can climb rocky paths and is not afraid to walk along the sides of steep cliffs. His slender legs are very strong, and he can carry a heavy load up the mountain sides.

The donkey in the picture carried tools and food for men who built a railroad to the top of a high mountain, called Pikes Peak.

60. Colorado Cañon.

Where is the Great Basin? What mountains are east of the Great Basin? What ranges are west of it?

What river basin lies south of the Great Basin? What river is on the north?

The Colorado river is noted for the deep valley which it has worn. In some places this stream flows between steep banks of solid rock, more than a mile in height.

Many of the branches of the Colorado river have also cut deep cañons in the rock.

In some places the land south of the Colorado river looks like that in the picture below. The valleys, or cañons, are deep and wide. The soil is poor, but it supports enough grass to feed thousands of cattle.

In the rainy months large streams rush through some of these cañons, but when the rain is over, the beds of the rivers are dry and sandy.

61. The Height of Land.

Where are the Great Lakes? How many of these lakes are there?

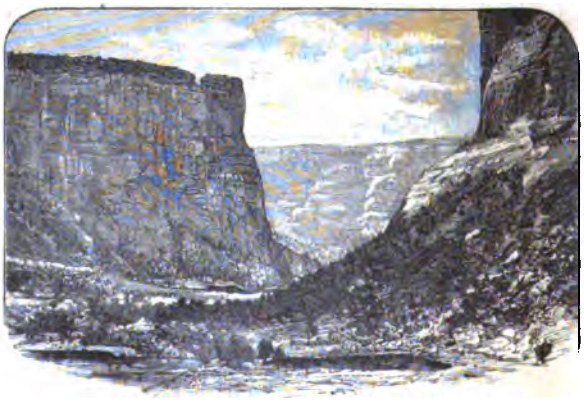
What large river flows from one of the lakes?

About halfway between the gulf of Mexico and the Arctic ocean a low swell of land runs eastward from the Rocky mountains. It is called the *Height of Land*.

Some parts of the Height of Land are hilly, but in most places the land slopes so gently that it looks level.

The Great Lakes are in a chain of valleys on the southeast slope of the Height of Land. The St. Lawrence river flows from the lowest of the lakes.

The Niagara river flows from Lake Erie to Lake Ontario. This stream is noted for the grand falls which are about midway between the lakes.



Cañon in Arizona.

Just above the falls of Niagara the river is about a mile wide. Below this point the stream narrows and plunges over a precipice about one hundred and fifty feet in height.

Below the falls the river flows in a wide, rocky gorge.

The water that *in a single minute* makes the leap of Niagara would fill a box fifty feet wide, fifty feet high and more than a mile long.

A canal has been made between Lake Erie and Lake Ontario, and ships can go back and forth, without sailing upon the Niagara river.

62. The Mississippi Basin.

What large river basin is south of the Height of Land?

In what general direction does this basin slope?

Into what body of water does the Mississippi river flow?

What bounds the basin of the Mississippi on the west? On the east? On the north?

What large river from the west flows into the Mississippi? Where does the Missouri river rise?

Niagara Falls.

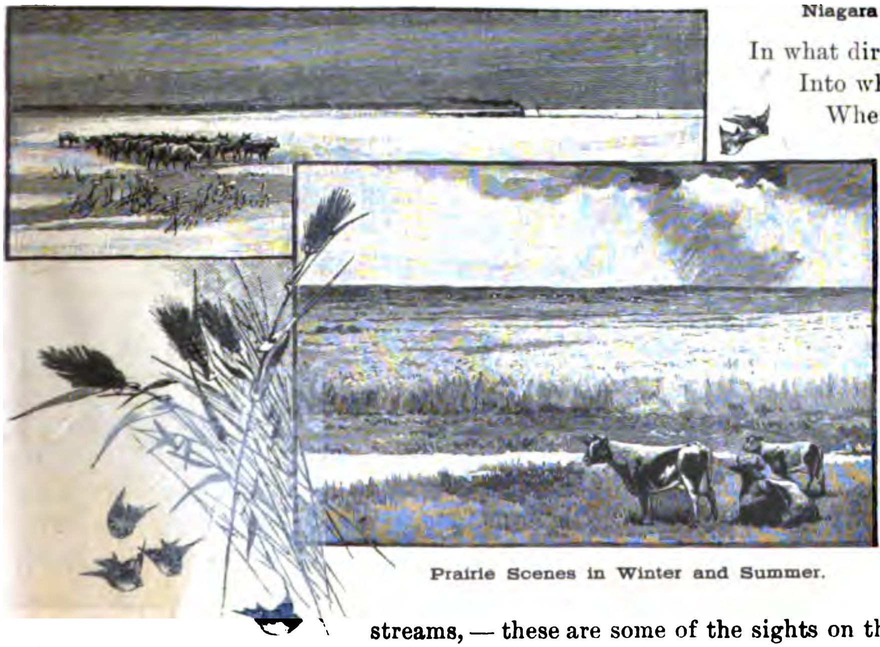
In what direction does the Ohio river flow? Into what does it flow?

Where are the *prairies?* Where are the *western plains?* Where are the *southern plains?*

The vast plains that spread round the Great Lakes on nearly all sides are called *prairies.* The soil in most places is deep and fertile.

Mile after mile of nodding cornflower, mile after mile of waving wheat, grassy fields dotted with sleek cattle, — these are some of the sights on the prairies in summer.

Mile after mile of drifting snow, mile after mile of frozen streams, — these are some of the sights on the prairie in winter.



Prairie Scenes in Winter and Summer.

The southern plains are very fertile, and they are warmer than the prairies. A great deal of corn is raised on these plains. Here, also, are vast fields of cotton. What have you learned about the growth of this useful plant?

Cotton Market.

Perhaps some of the clothing which you now wear is made of cotton that grew on the southern plains.

What have you read about the western plains?

63. North of the Height of Land.

Where is Hudson bay? A large river flows into Hudson bay, and another flows into the Arctic ocean.

The basins of these rivers are mostly in cold regions.

Northwest of the Great Lakes there are broad prairies, with many rich grainfields.

64. Appalachian Highland.

What highland is on the east of the Mississippi basin? Is it higher or lower than the Rocky Mountain highland?

Why are there no very large rivers east of the Appalachian highland?

The mountains of the Appalachian highland are not very high. They consist chiefly of long rounded ridges or folds.

65. Atlantic Slope.

Many short rivers flow across the narrow plains east of the Appalachian highland. Some of these streams are deep enough to float large vessels. The slope east of the Appalachian highland is called the *Atlantic slope.*

Where is the Hudson river?

The largest city in America is at the mouth of the Hudson river.

Find out at home all you can about this city, — its long bridge, its great statue, its bay and its park.

66. Pacific Slope.

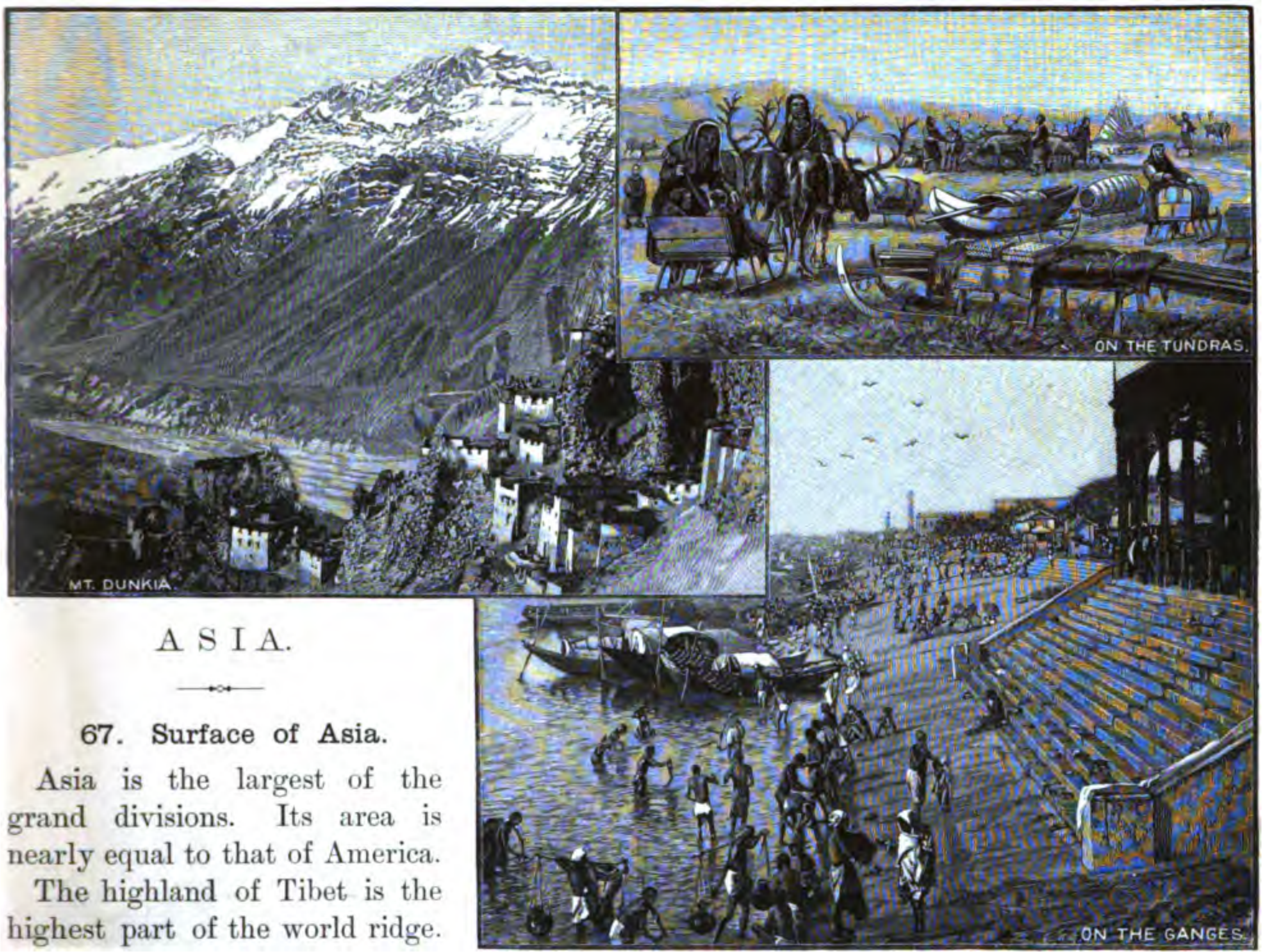
The slopes west of the Sierra Nevada and Cascade ranges are short, and some of them are very fertile. A low range lies near the shore of the Pacific. It is called the Coast range.

The picture on page 9 shows a very small part of the Pacific slope. This part is not very far from the southern end of the Sierra Nevada range.

Orange Grove.

Many beautiful groves of oranges and lemons grow in these warm valleys, along the foot of the ranges.

The region west of the Sierra Nevada and Cascade ranges is known as the *Pacific slope.*

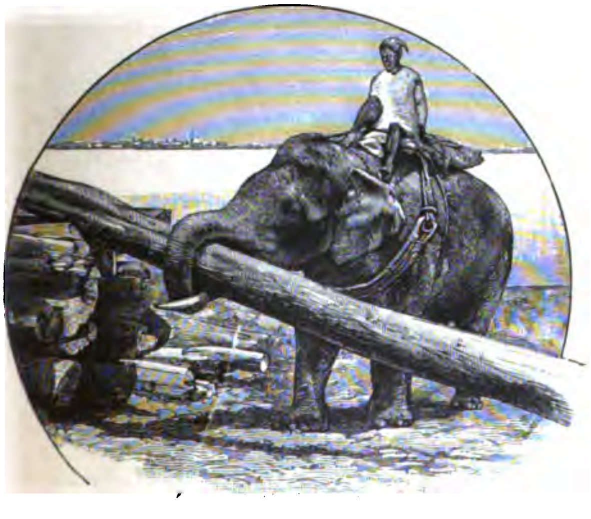

MT. DUNKIA.
ON THE TUNDRAS.
ON THE GANGES.

ASIA.

67. Surface of Asia.

Asia is the largest of the grand divisions. Its area is nearly equal to that of America.

The highland of Tibet is the highest part of the world ridge. Its plateau is nearly three miles above the level of the sea, and some of its peaks are almost as high again.



Working Elephant.

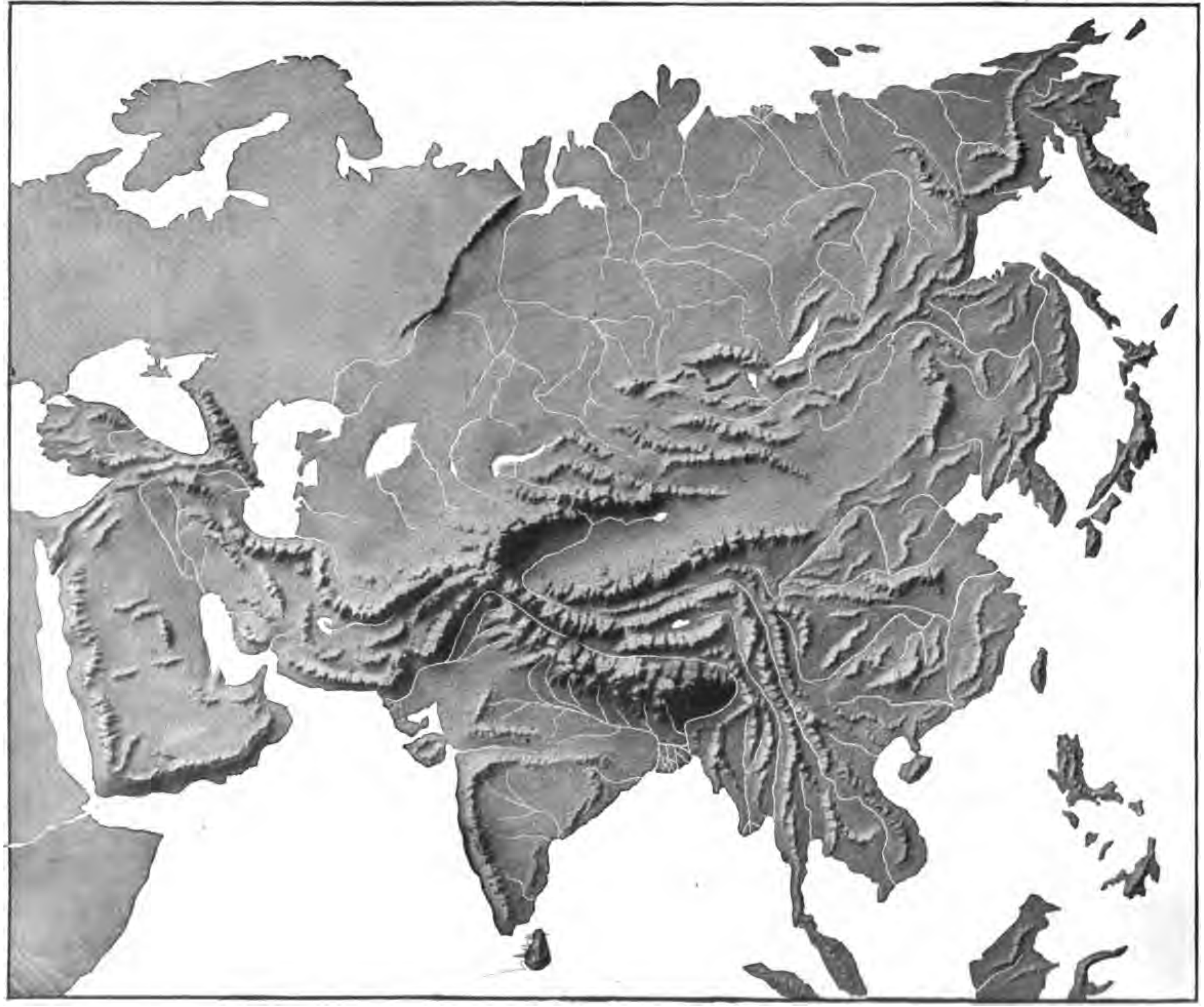
The giant range of Himalaya mountains rises at the southern edge of Tibet. The word *Himalaya* means the *abode of snow*. Even during the hottest part of summer a white mantle covers this range for a distance of about two miles from its crest.

Mt. Everest, in the Himalaya range, is thought to be the highest peak on earth. It rises five miles and a half above the level of the sea.

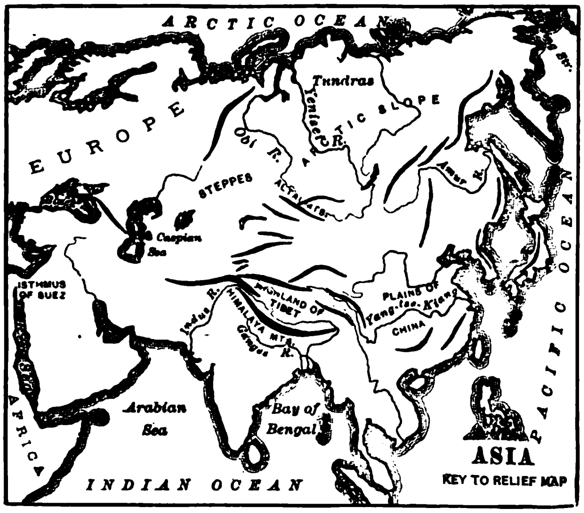
On the north, east and south, vast slopes stretch away from Tibet. They form wide plains along the shores of three oceans.

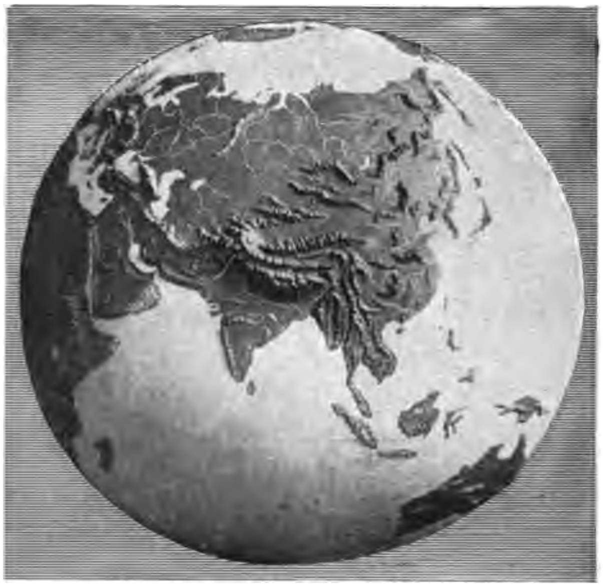
The pictures show a Himalaya peak, a group of natives on the tundras and a bathing scene in a large river south of Tibet.

What is the elephant doing?



RELIEF MAP OF ASIA.





68. Map Studies.

What oceans lie between North America and Asia?

What ocean is south of Asia?

Where is the highland of Tibet? On which side of Tibet is the longest slope?

In what direction would you have to travel from your home to reach Asia?

What strait separates North America from Asia?

Look at the relief map, and describe Asia.

69. Arctic Slope.

The longest slope of Asia reaches from Tibet to the Arctic coast. A large portion of this slope is a vast low plain, and is crossed by several large rivers.

During the greater part of the year the Arctic coast of Asia is icebound. The frozen mass then reaches from the shore to the pole.

What have you read about the *tundras?* Where are they?

A dense forest covers a large part of the plain south of the tundras. In this forest live many little animals that are hunted for their thick fur.

Here is found the cunning beaver. It feeds on berries, leaves and bark. The beaver builds its hut at the edge of a river or lake.

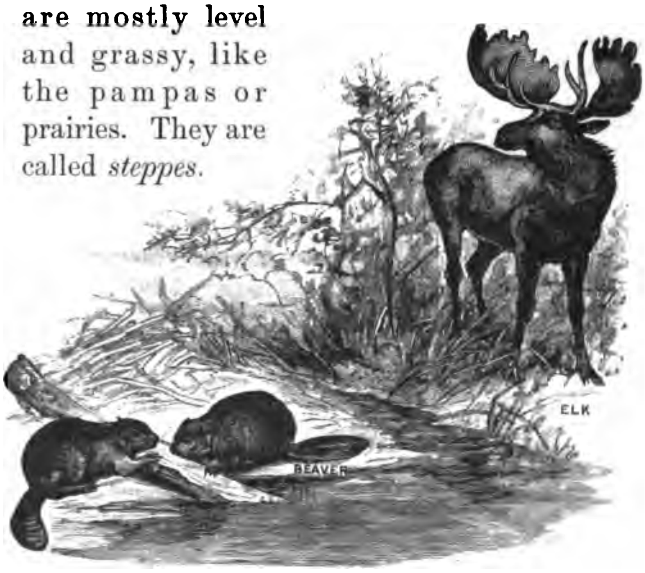
Do you know any stories about beavers? Have you ever seen any beaver fur?

The elk is a very large kind of deer that is found in the northern parts of Asia and Europe.

70. Caspian Basin.

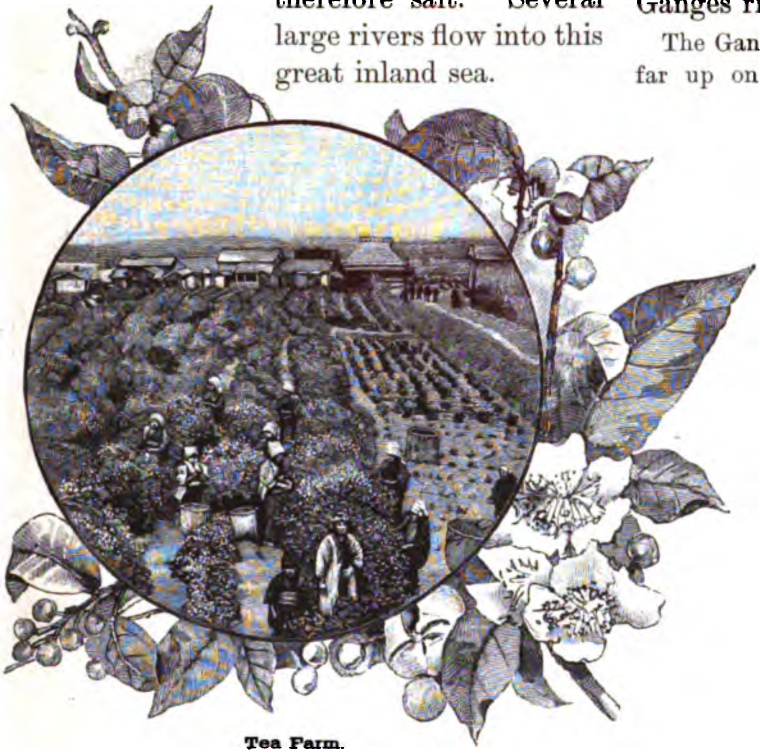
Where is the Caspian sea? Can you find any streams flowing from this sea to the ocean?

The great plains around the Caspian sea send no rivers to the ocean. These plains are mostly level and grassy, like the pampas or prairies. They are called *steppes.*



Large herds of cattle and horses graze on the steppes.

The Caspian sea has no outlet, and it is therefore salt. Several large rivers flow into this great inland sea.



Tea Farm.

71. Plains of China.

The most important slopes of Asia are east and south of Tibet. On the east lie the plains of China, sloping to the Pacific ocean.

The tea plant grows on the plains of China, east of Tibet. It has a pretty white blossom, with a yellow center.

This plant is raised for its leaves. Several times a year the new leaves are picked and baked. They are then sent to people in nearly all parts of the world.

When fresh tea leaves are roasted quickly they form green tea. When dried in the sun and then roasted they form black tea. If you will unroll a piece of coarse *tea grounds* you will see a tea leaf.

72. The Ganges Basin.

The warm slopes of the Ganges basin lie south of Tibet. In what direction does the Ganges river flow? Where does it rise?

The Ganges river flows from melting ice and snow, far up on the side of the Himalaya mountains. Countless little streams rise near by and flow to join the Ganges.

This river enters the sea through a great delta which swarms with people. The soil of the delta is very rich, and here may be seen acres and acres of flat rice fields, with groves of bamboo and cocoanut trees.

One of the most useful products of southeast Asia is bamboo. This is a coarse grass, growing to the height of from fifty to seventy feet.

The seeds and tender shoots of the bamboo are used for food. The hollow stems make good water pipes.

Strips of the stem are used in making baskets, chairs, beds, boats and weapons.

Strong fibres of bamboo are woven into cloth and twisted into rope. The hull, ropes and sails of the vessel shown on page 78 were all made of this useful plant.

Many of the native huts are made of bamboo, with dried grass for roofs. Groups of such huts are often hidden by groves.

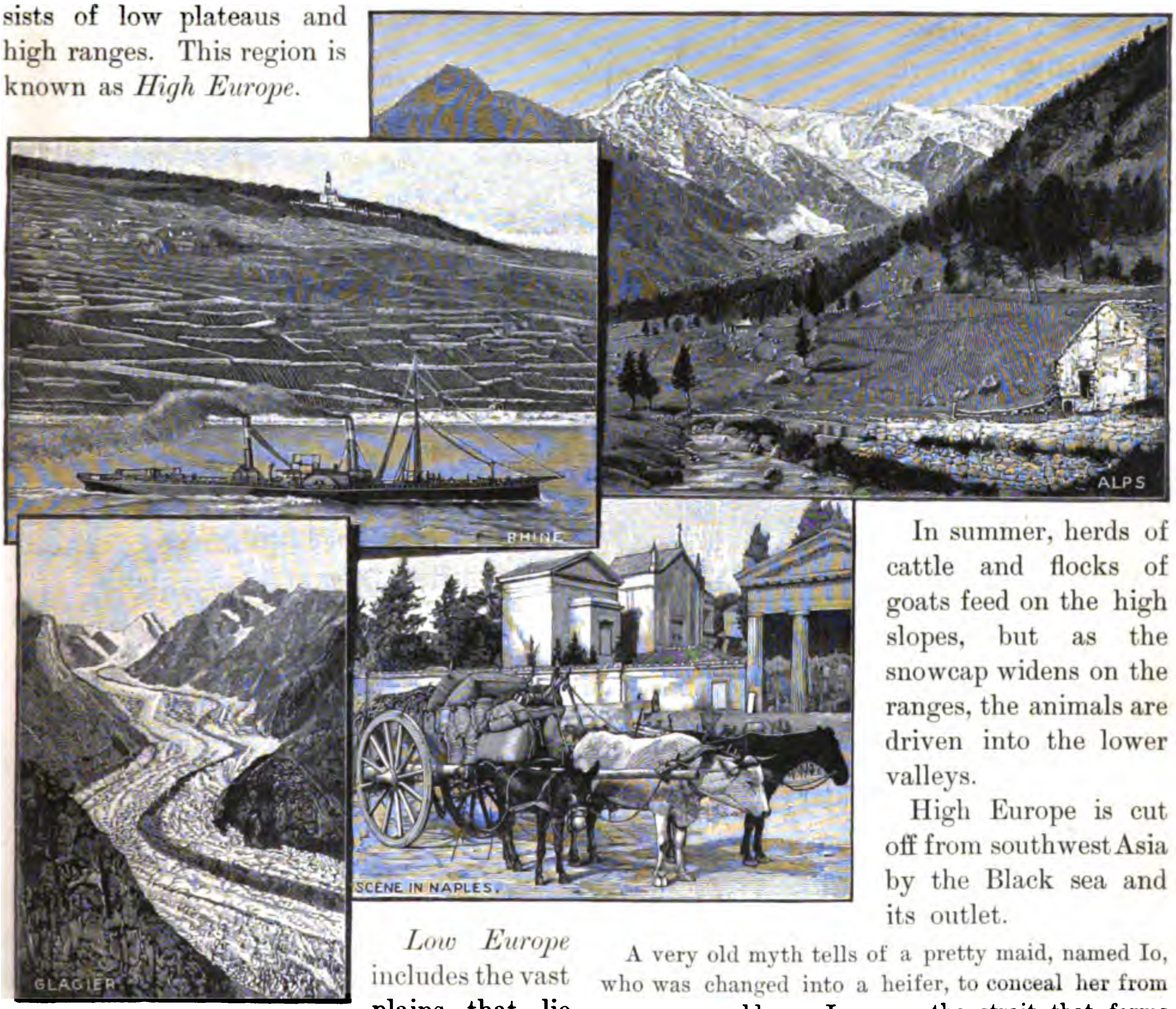
A Village near the Ganges.

EUROPE.

73. Surface of Europe.

Europe lies west of Asia.

The greater part of southwest Europe consists of low plateaus and high ranges. This region is known as *High Europe*.



Low Europe includes the vast plains that lie north and northeast of High Europe.

Where is the Swiss highland? Where are the Alps?

The Swiss *plateau* is low, but the ranges that rise above it are high and rocky.

The Alps are famous for their beauty. The tops of some of the peaks are buried in snow and ice all the year. Long rivers of ice creep down the sides of the mountains, and melt, thus forming beautiful streams and lakes.

In summer, herds of cattle and flocks of goats feed on the high slopes, but as the snowcap widens on the ranges, the animals are driven into the lower valleys.

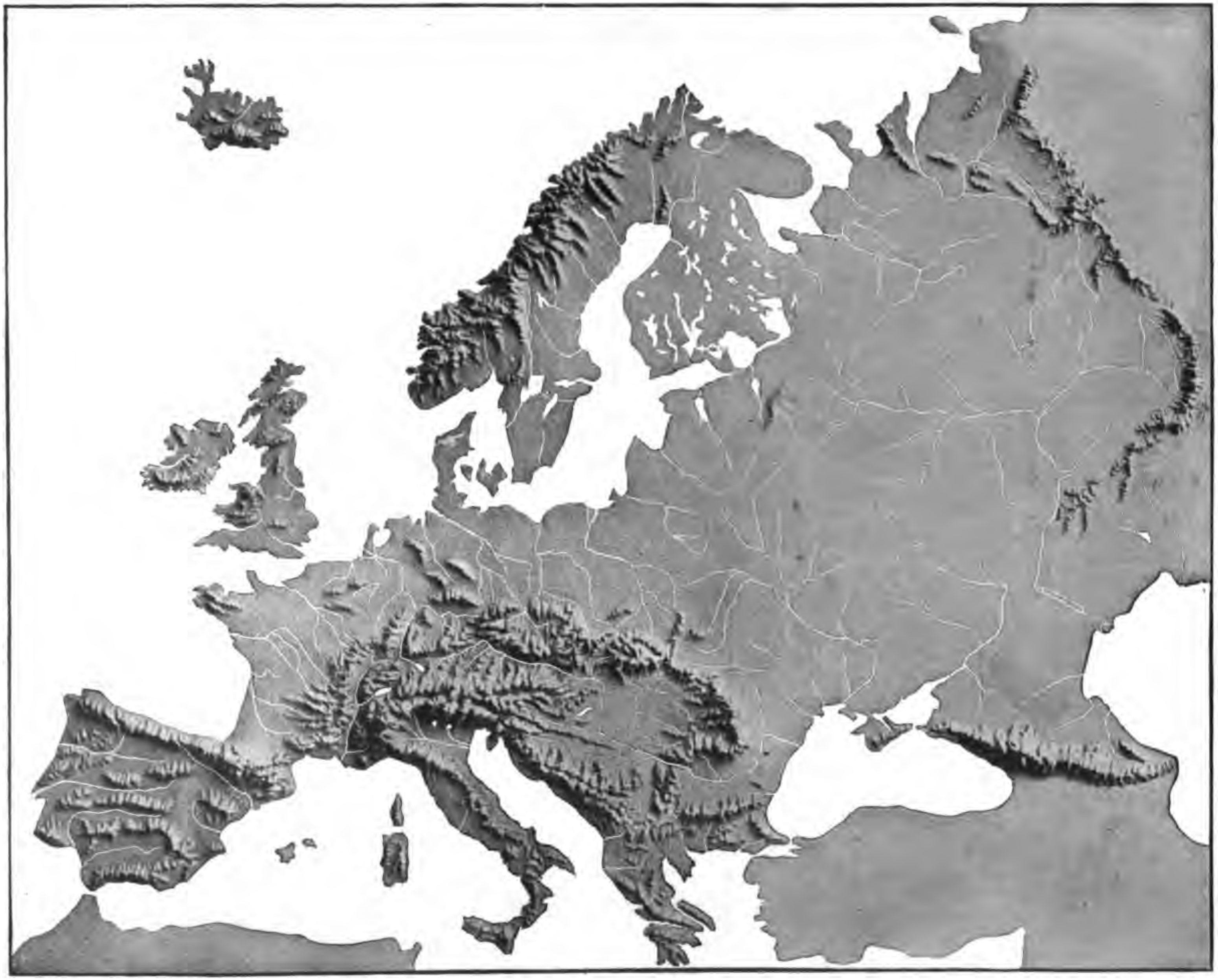
High Europe is cut off from southwest Asia by the Black sea and its outlet.

A very old myth tells of a pretty maid, named Io, who was changed into a heifer, to conceal her from an angry goddess. Io swam the strait that forms the outlet of the Black sea.

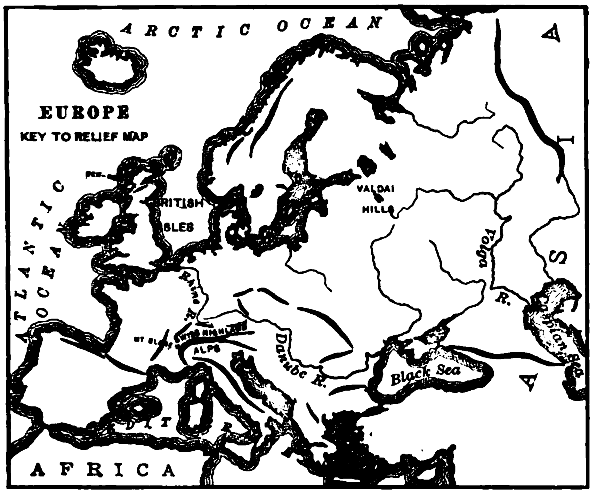
The strait took its name from this story, for the word *Bosporus* means *heifer's ford.*

At its narrowest part, the strait of Bosporus is only a few hundred feet wide.

The great city of Constantinople is built near this strait.



RELIEF MAP OF EUROPE.



74. Map Studies.

Look at the relief map, and describe Europe. State where it is; what large bodies of water surround it; where its highlands and lowlands are, etc.

On which side of the world ridge is Europe?

75. Slopes from the Swiss Highland.

The slopes that extend from the Swiss highland to the sea are short, and the river basins are small.

Where does the Danube river rise? In what direction does its basin slope? Into what sea does the river flow?

Where does the Rhine river rise?[1] In what direction does its basin slope?

What long peninsula is south of the Swiss plateau? Where is the peninsula of Spain?

The strait of Gibraltar connects the Atlantic ocean and the Mediterranean sea. Near this strait a huge mass of rock rises on the coast of Spain.

From a distance this *rock of Gibraltar* looks bleak and barren. A nearer view shows many grassy slopes, with groves of olive and orange trees.

At times wild flowers cover many parts of the rock. The deep caves that run through nearly every part of this great mass have given it the name "hill of caves."

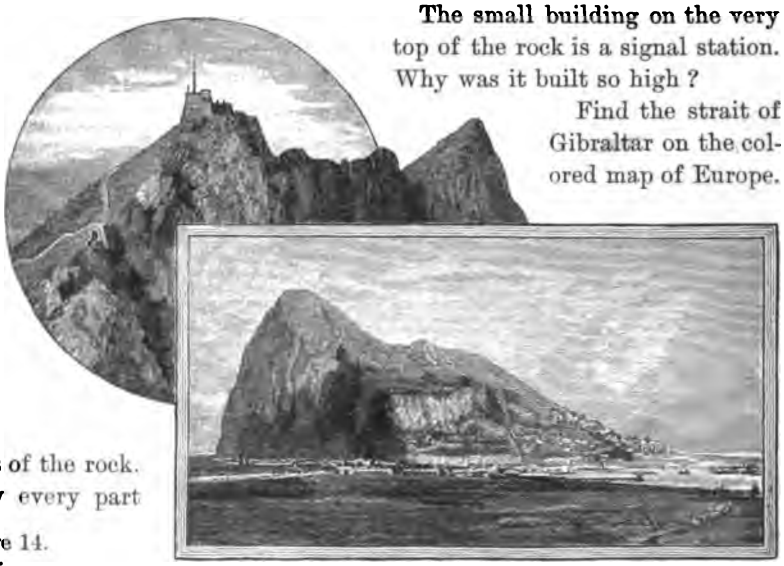
In these vast hollows the rock has made icicle-forms of great size and beauty. Some of these look like animals, and others look like forests of marble, rising to the roofs.

A few small apes live on the highest parts of Gibraltar. They often injure the fruits, but nobody tries to harm the little creatures.

Gibraltar is a strong fortress.[2] On some parts of the rock cannon bristle at every point.

The small building on the very top of the rock is a signal station. Why was it built so high?

Find the strait of Gibraltar on the colored map of Europe.



Rock of Gibraltar.

---

[1] See pictures of the Rhine on page 14.

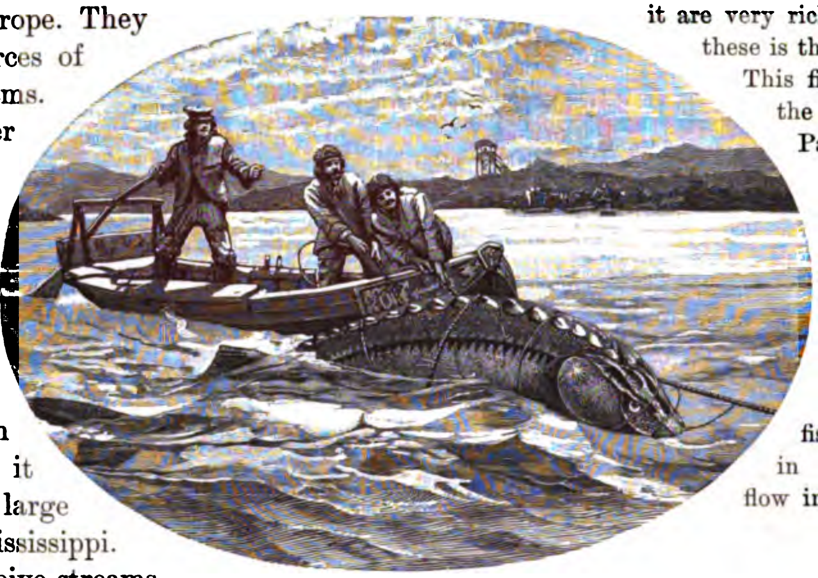
[2] Gibraltar belongs to Great Britain.

76. Valdai Hills.

Where are the Valdai hills? Where does the Volga river rise? Into what sea does the Volga flow?

The Valdai hills rise only a little above the great plain of Europe. They contain the sources of many large streams.

The Volga river rises in a marsh in the hill region, and flows into the Caspian sea. The basin of the Volga is the largest river basin in Europe, but it is not one half so large as that of the Mississippi.



Sturgeon Fishing.

What seas receive streams from the region of the Valdai hills?

The vast plain that spreads round the Valdai hills is crossed by a network of canals. These connect with the rivers, and form the main highways of trade.

The canals reach lumber and fur regions on the north, rich mines of gold and silver in the mountains that lie to the east, and fertile grainfields on all sides.

In return for the products of these regions, the canals carry cloth, tea, sugar and farming tools to the people of the plain.

77. The Caspian Sea.

The Caspian sea is the largest body of water having no outlet to the ocean. Its area is much larger than that of the Great Lakes of North America.

The Caspian sea is salt, and its surface is a little below the level of the ocean.

The Caspian sea is often swept by cold winds from the north. In winter the mouth of the Volga is closed by ice. During the open season many vessels trade at the ports by the sea and on the rivers.

The Caspian sea and the streams that flow into it are very rich in fish. Among these is the sturgeon. This fish often grows to the length of ten feet. Part of its body is covered with bony plates. Its mouth is small and toothless, and is under the long snout. Many thousand people earn their living by catching fish in this sea and in the streams that flow into it.

78. British Isles.

What islands are west of the mainland of Europe?

A few low ranges cross the British Isles.

These are the most important islands on earth. The trade between the people of the British Isles and of the United States is very large.

Ben-Nevis is the highest mountain in the British Isles. Find it on the *key* map, page 47.

Ben-Nevis, Scotland.

A Highland Cottage.

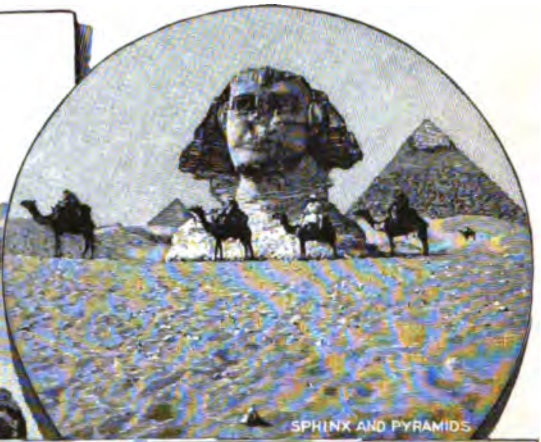
AFRICA.

79. Surface of Africa.

A part of the world ridge extends along the eastern side of Africa.

Nearly all Africa is a plateau. The northern half is not very high.

ON THE NILE



SPHINX AND PYRAMIDS

ATLAS MTS.

Ranges of mountains lie along the greater part of the coast. Between these ranges and the sea there are low, narrow plains.

The highest parts of Africa are in the east and south.

Where is the highland of Abyssinia? What have you read about a great mountain south of this region? The highland of Abyssinia is about as lofty as that of Mexico.

Africa has several very large river basins. Among these are the Nile and the Kongo.

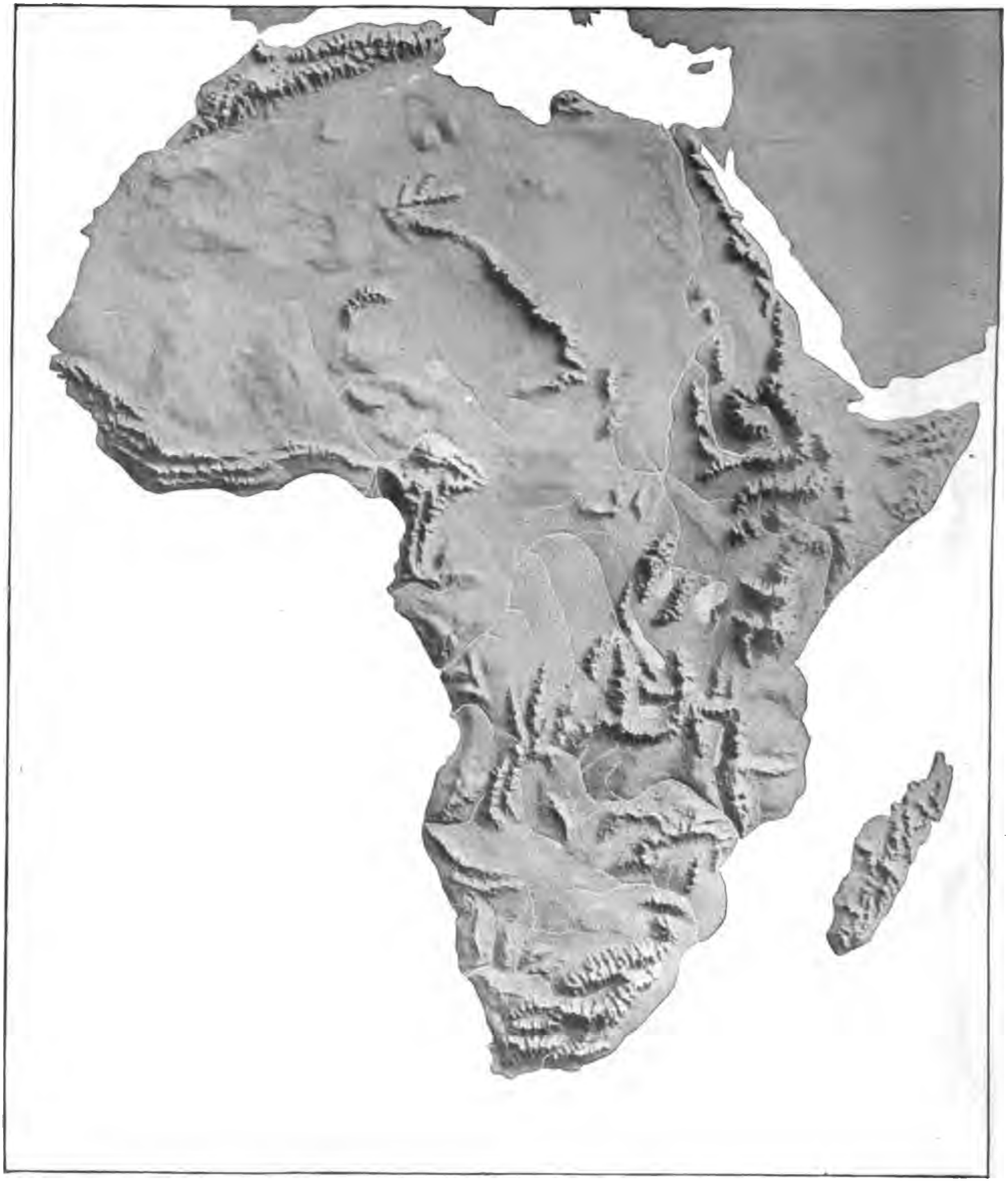
The upper part of the Nile basin is in the plateau of middle Africa. This basin is long and narrow, and it slopes to the north.

The upper portion of the Kongo basin also is in middle Africa. The main slope of this basin is towards the west.

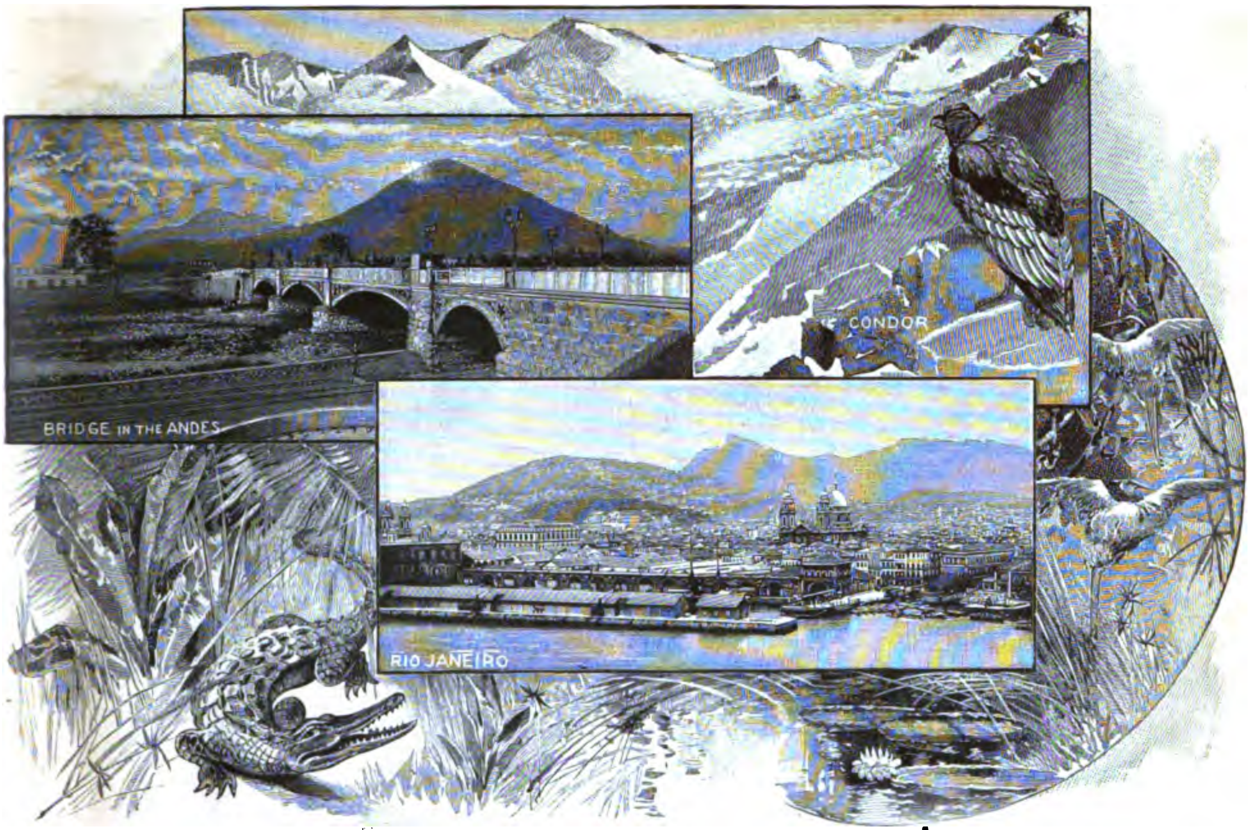
Nearly all the northern part of Africa is a vast desert. It is called the *desert of Sahara*. Which picture on this page shows a part of the desert?

Africa is a land of large and fierce animals. On page 85 there are pictures of some of these?

Find the Atlas mountains on the map of Africa, page 113.



RELIEF MAP OF AFRICA.



SOUTH AMERICA.

51. Surface of South America.

Cape Horn is at one end of the world ridge. It is on a great mass of rock, rising from the sea.

Round this bleak point the sea is often very rough and stormy. Icebergs, or huge blocks of ice, sometimes drift past this cape.

The Andes highland extends northward from Cape Horn. How long is this highland?

The widest part of the Andes highland is near the great bend in the Pacific coast. Here the ranges inclose a lofty plateau.

On this part of the highland lies the beautiful Lake Titicaca. It is about two miles and a half above the level of the sea.

Steamers cross this lake, and connect the villages with a railroad that winds down to the coast. Rich grainfields spread round Lake Titicaca, and the mountains that inclose its basin have rich silver mines.

What part of South America is crossed by the equator?[1]

Near the equator stands a group of noted volcanoes. Among them the high plains wind like long avenues.

Where is the isthmus of Panama?

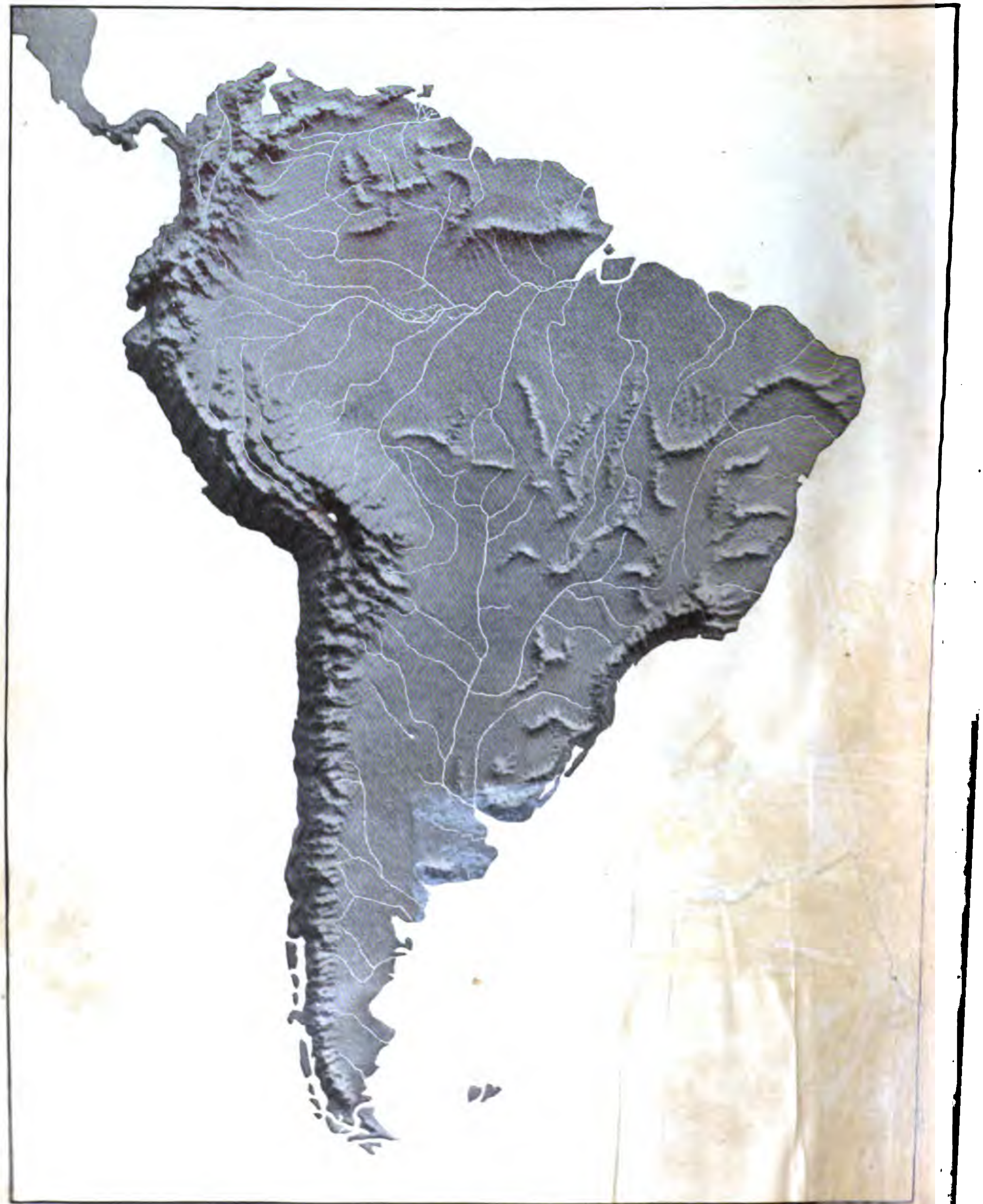
The Andes highland covers about one sixth of this grand division.

The long slope of South America is east of the Andes highland. What have you read about the selvas?

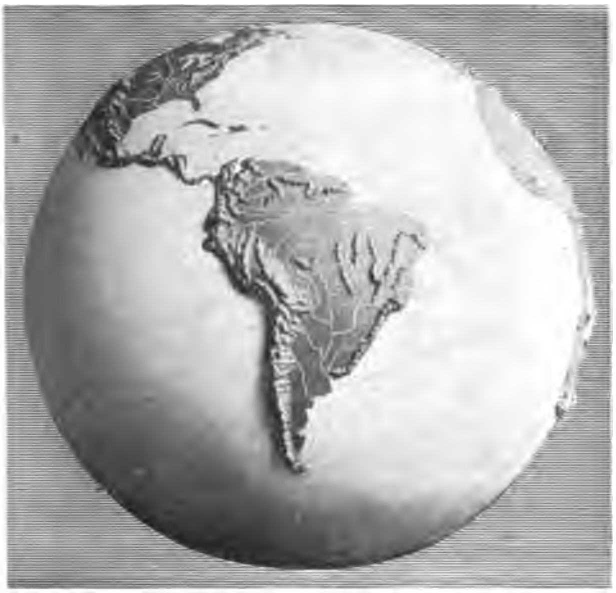
The long bridge in this picture is near the city of Lima. Find Lima and Rio Janeiro on the map.[1]

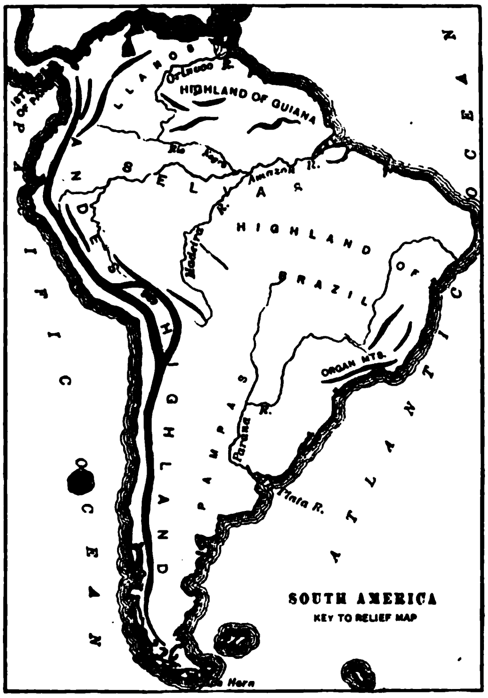
---

[1] See the colored map of South America.



RELIEF MAP OF SOUTH AMERICA.





SOUTH AMERICA
KEY TO RELIEF MAP

52. Map Studies.

What oceans border on South America?

What part of the world ridge is in South America? Along what coast does it lie?

Which part of the Andes highland looks the widest? Which part looks the highest?

On which slope of the Andes are there no long rivers? Why? Find Cape Horn on the map.

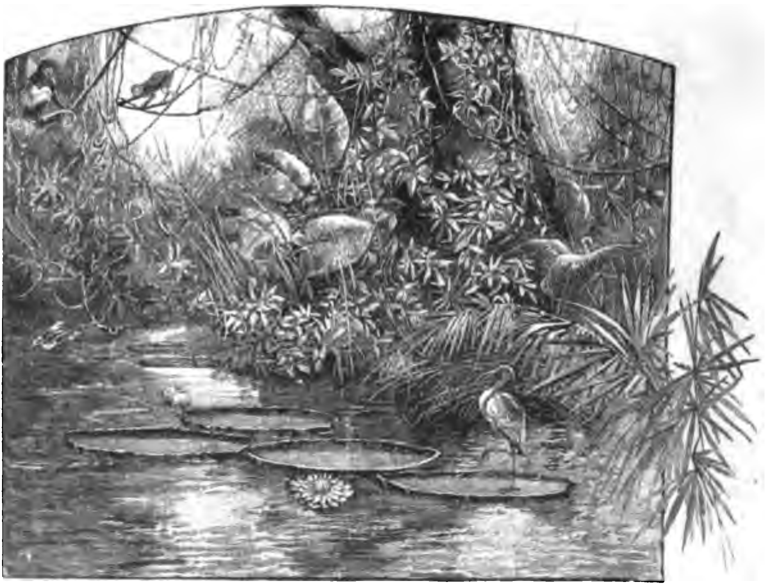
Where is the isthmus of Panama?

53. Amazon River.

What large river near the equator flows towards the east? Where does the Amazon river rise? Should you like to sail up the Amazon river? What large trees grow along the banks! Long vines hang from the branches, and weave thick nets.

The river is very wide, and many little bays indent its banks. Let us enter one of them. Tall reeds line the banks, and grow far out in the shallow, muddy water. Beautiful birds flit about. Noisy parrots scream at us, and many monkeys chatter as we pass.

See the sleepy stork with long neck and long legs. It is standing on a large lily leaf that floats on the water. The blossom of this lily is as large as the head of a barrel. It is pink-white, with a golden center. The forest is so large that we might spend many years following the streams that wind through it. We should see wonderful sights, — trees whose sap is made into rubber, cat-like animals with bodies larger than our own, and alligators that would like to make a meal of us.



Scene on the Amazon.

page missing

54. Highland of Brazil.

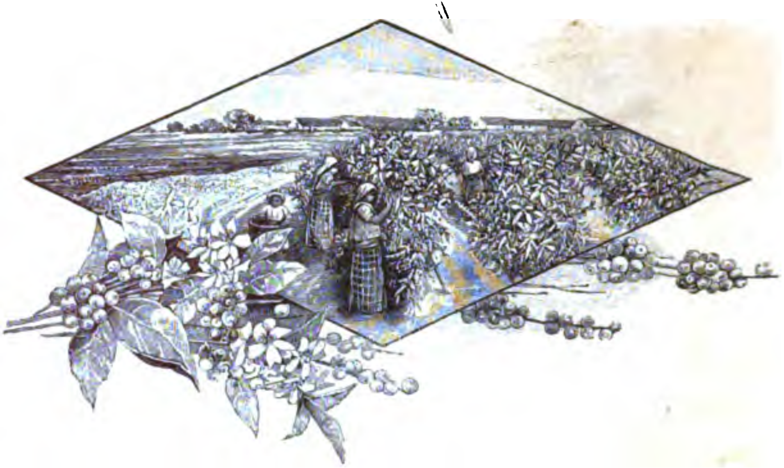
A highland rises near the east coast and extends far inland. This is the highland of Brazil. It is only about one sixth as high as the Andes highland.

The coffee plant needs warm weather and a great deal of rain.

See the pretty white blossoms and the little berries that look like cherries. When the berries turn dark red and begin to shrivel, they are picked and put into a machine that takes out the seeds.

Each berry has two seeds. Before the seeds are used, they are baked and ground. Have you ever seen a grocer grinding coffee seeds?

Most of the coffee used in our country is raised on the highland of Brazil.



Coffee Plantation.

55. Pampas.

Where is the La Plata river? In what direction does the La Plata basin slope?

Which is the larger, the basin of the Amazon or that of the La Plata?

What highland divides the streams of these basins?

The greater part of the La Plata valley is a vast plain. Its soil is deep and rich. During the wet season, many parts of this plain are covered with tall, coarse grass, above which wave white silky plumes. The grassy plains of the La Plata valley are called *pampas*. Vast herds of cattle and sheep graze in this wide valley, and many miles of the rich soil are planted with grain.

Pampas Grass

Where is the Orinoco river?

A large part of the Orinoco valley consists of wide, grassy plains, called *llanos*. Large herds of cattle graze on the llanos.

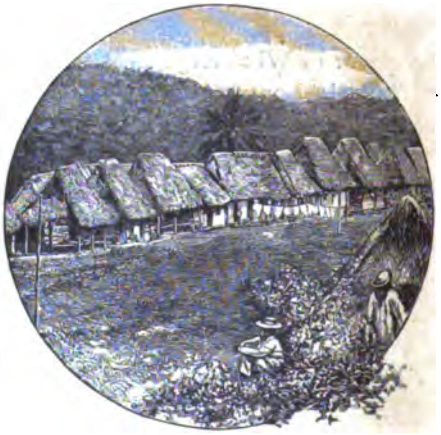
56. Isthmus of Panama.

This village is on the slender neck of land that connects the two Americas. What is the name of this isthmus?

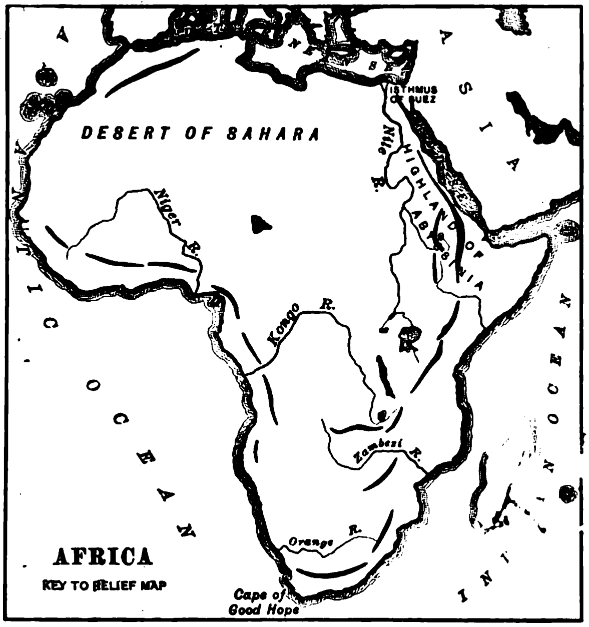
Of what are the houses made? How do the people dress?

A person on horseback can cross the isthmus of Panama in a day, but the ride over the hills is a long and hard one.

There is a railroad across this isthmus.



A Panama Village.



80. Map Studies.

What bodies of water surround Africa?

Look at the relief map, and describe Africa.

What isthmus joins Asia and Africa?

A great ship canal has been dug across the isthmus of Suez. Thousands of steamers pass through it every year.

Before the Suez canal was made, the water route from Europe to southeast Asia led round the southern end of Africa. This canal cuts off about one half the distance.

Two Views of the Suez Canal.

What seas are joined by the Suez canal? Does the land near the canal look fertile or barren?

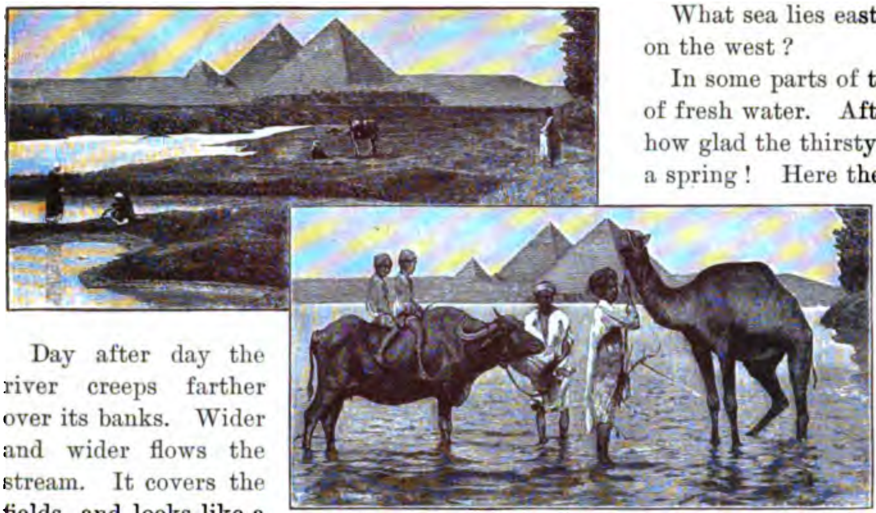
81. The River Nile.

Where does the Nile river rise? In what direction does its basin slope? Into what sea does the river flow?

Every summer the Nile overflows its banks. The water comes from great lakes near the middle of Africa and from melting snow on the mountains of Abyssinia.

At this time hundreds of muddy streams flow down the steep slopes, and swell the branches of the Nile. The river rushes and foams over the rough places in its bed, and the muddy water rises higher and higher.

In its lower part the Nile flows through a long valley that is only a few miles wide. The valley is shut in between high cliffs. A vast desert stretches away beyond the cliffs, on both sides.



Low and High Nile.

Day after day the river creeps farther over its banks. Wider and wider flows the stream. It covers the fields, and looks like a vast lake.

At length the river begins to grow smaller. Weeks pass, and now it flows again in its narrow bed.

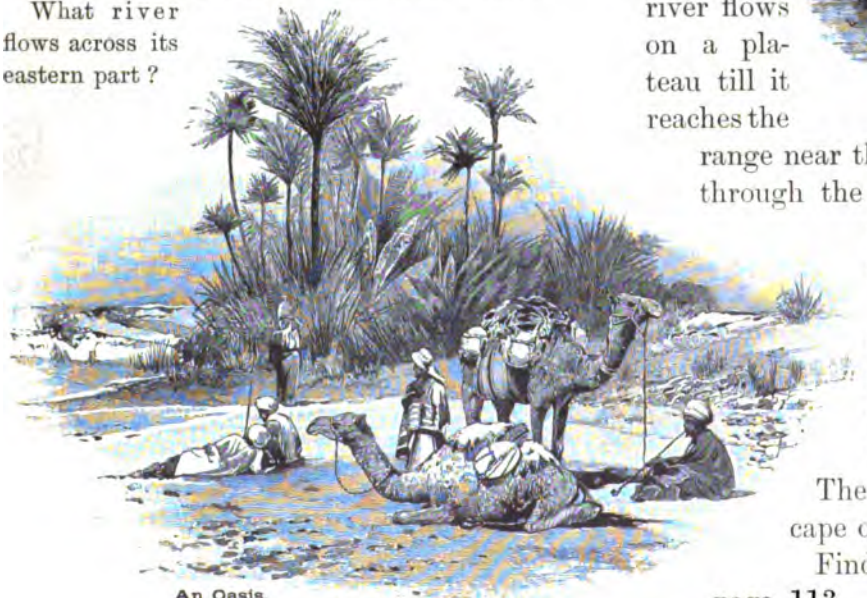
The water has left a thin coating of soil on the banks. The land is ready for seeds, and the long valley will soon be covered with grain. There will be food for the next dry season.

Thus the high slopes supply soil for plants, and it is carried down by the great river Nile, just as it is by tiny rills and brooks.

82. Oasis in the Desert of Sahara.

What have you read about the great desert?

What river flows across its eastern part?



An Oasis.

What sea lies east of the desert? What ocean is on the west?

In some parts of the great desert there are springs of fresh water. After days of hot and dusty travel, how glad the thirsty people and camels are to reach a spring! Here they find rest.

Villages grow up near these springs. Date trees are planted, and soon bear clusters of sweet fruit.

Dates are the chief food of many people who live in hot deserts. Some of the fruit is pounded and pressed into cakes. Camels and horses are sometimes fed on dates.

A fertile spot in a desert is called an *oasis*. The vast barren tract in the north of Africa is the desert of Sahara.

83. Kongo Basin.

It is thought that the basin of the Kongo is about equal in area to that of the Mississippi. The Kongo river flows on a plateau till it reaches the range near the west coast. There it flows through the mountains, and rushes into the low plains that lie along the shore.

Cape Town.

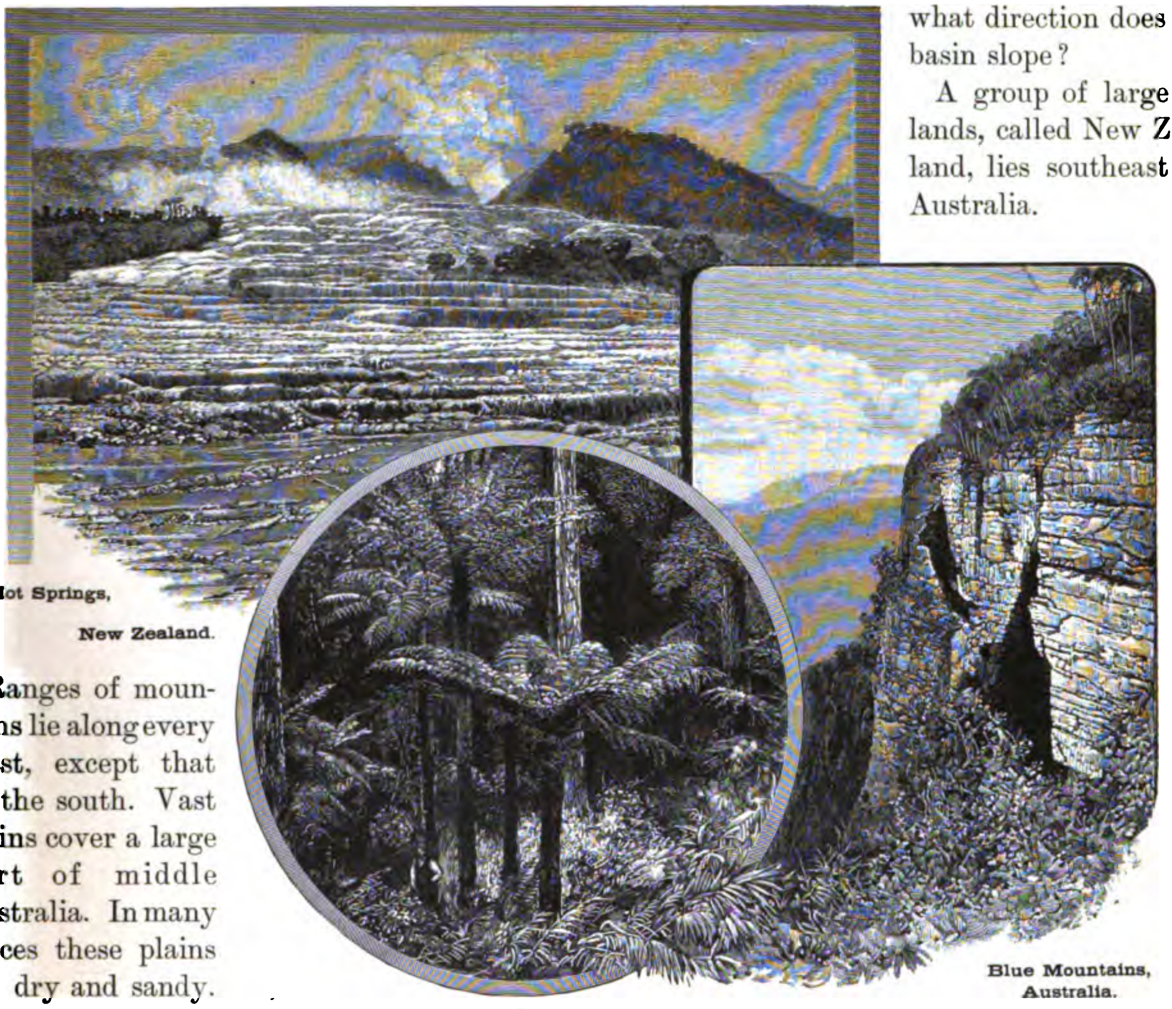
Vessels cannot sail very far up the Kongo. For this reason there is very little trading done with the negroes who live in the Kongo basin.

The world ridge ends near the cape of Good Hope.

Find Cape Town on the map, page 113.

84. Surface of Australia.

Australia is the smallest of the grand divisions. Its area is equal to about one third that of North America.



Hot Springs, New Zealand.

Tree Ferns.

Blue Mountains, Australia.

Ranges of mountains lie along every coast, except that on the south. Vast plains cover a large part of middle Australia. In many places these plains are dry and sandy.

None of the ranges in Australia are very high. The main range lies along the shore of the Pacific ocean. This range is highest near its southern end.

The mountains along the north and west coasts are in low and broken ranges. In places they are but little more than hills.

The largest river basin in Australia is that of the Murray. It is thought to be nearly one half as large as the basin of the Mississippi.

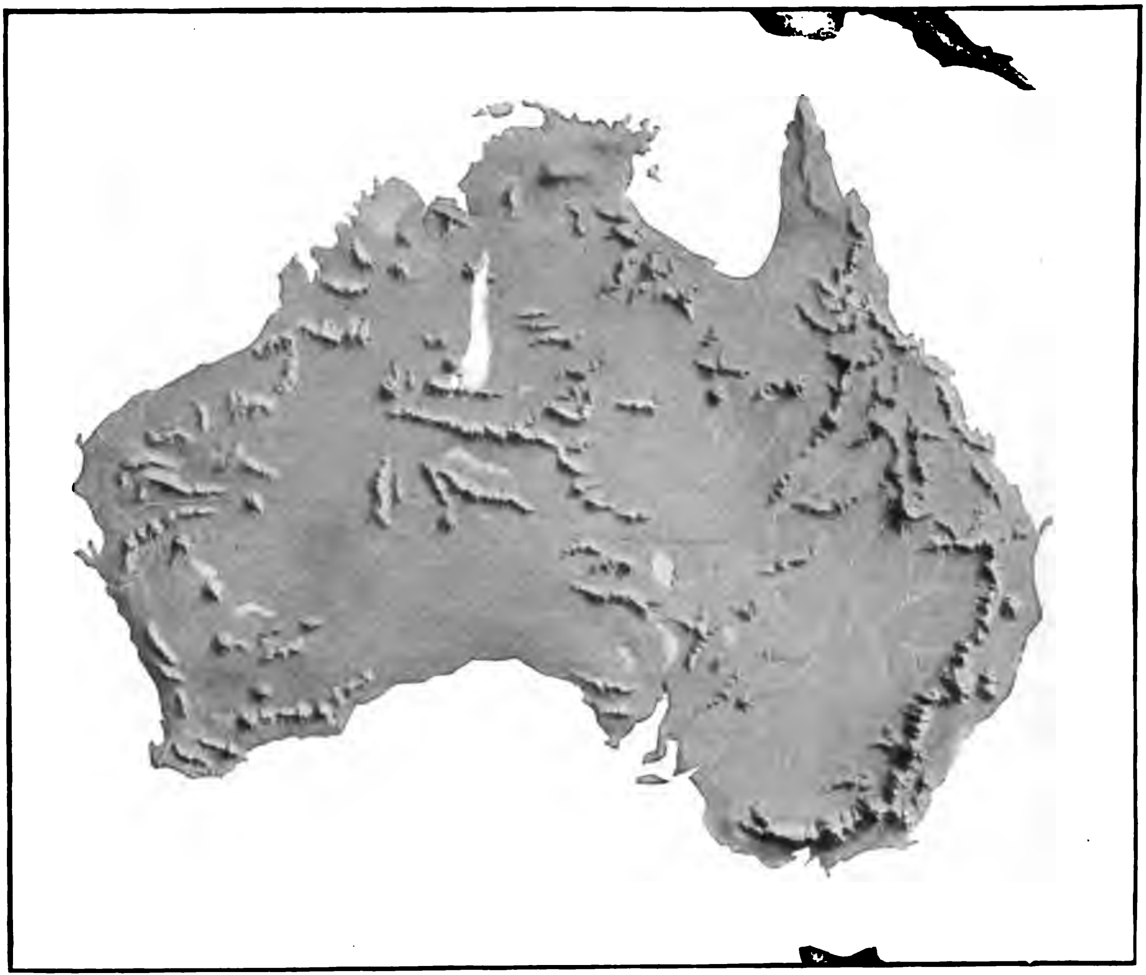
Where does the Murray river rise? In what direction does its basin slope?

A group of large islands, called New Zealand, lies southeast of Australia.

Many strange animals are found in Australia. Among these is the *kangaroo*. There is a picture of this animal on page 85.

See how large its hindlegs are. These strong legs are used in making long leaps.

The black people of Australia eat the flesh of the kangaroo. Many of the skins are sent to our country to be made into shoes.



RELIEF MAP OF AUSTRALIA.

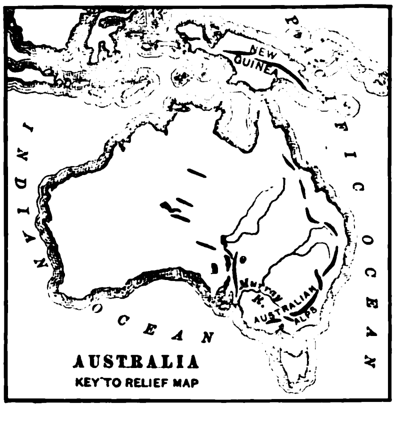
85. Map Studies.

In what direction from Asia is Australia? In what direction is it from Africa? From North America?

On which side of the equator is Australia? On which side of the world ridge is it? What bodies of water surround this grand division? Describe the surface of Australia.

What large island is north of Australia?

How does this grand division compare in area with South America?



AUSTRALIA
KEY TO RELIEF MAP

86. Tibbu, the Kongo Boy.

This tall hut is the home of little Tibbu. It is near the great river Kongo. Find this river on the map, page 113.

Carrying Ivory to the Coast.

Tibbu's face is black and his hair is woolly. All the girls and boys with whom he plays are of the same color, and have the same kind of hair.

To-day Tibbu must drive the *baboons* away from the cornfield, and so he sets out early with his little bow and arrows. He will not be lonely, for he will make a play-hut, just like the one in which he sleeps.

Shall we watch him make the hut? First he breaks off many strong reeds, and sets them in a circle in the ground. Then he ties others together to form the roof. He has no string, but he uses long grasses in its place.

Now he ties bunches of grass all over the reeds, and his hut is done. He has left a place for a doorway, but there are no windows. He needs no chimney, for the fire is built outdoors.

What will Tibbu put in his hut? He is making a pretty mat of grass for a bed. Now he is shaping little dishes in clay. He will bake the clay in a fire, and it will be very hard.

Come, Tibbu, it is time to go home. The sun is low in the sky, and the lions and elephants will soon come down to the river to drink. Take your bow and arrows, and run very fast.

What has Tibbu's sister been doing to-day? In the morning she pounded corn between two stones, and made meal for porridge. Then she helped her mother make cloth.

You could never guess how they made the cloth. They soaked long strips of bark in water, and then pounded them till they were soft. When the bark was dry, they gave it to the father to make into clothes.

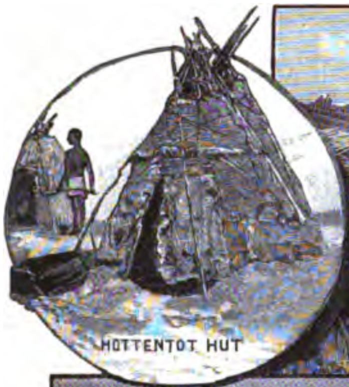
Baboon.

Should you like to know what these black children eat? Supper is ready and here are eggs, fresh fish and corn porridge. When they wish sweet food, they eat sugar cane or bananas.

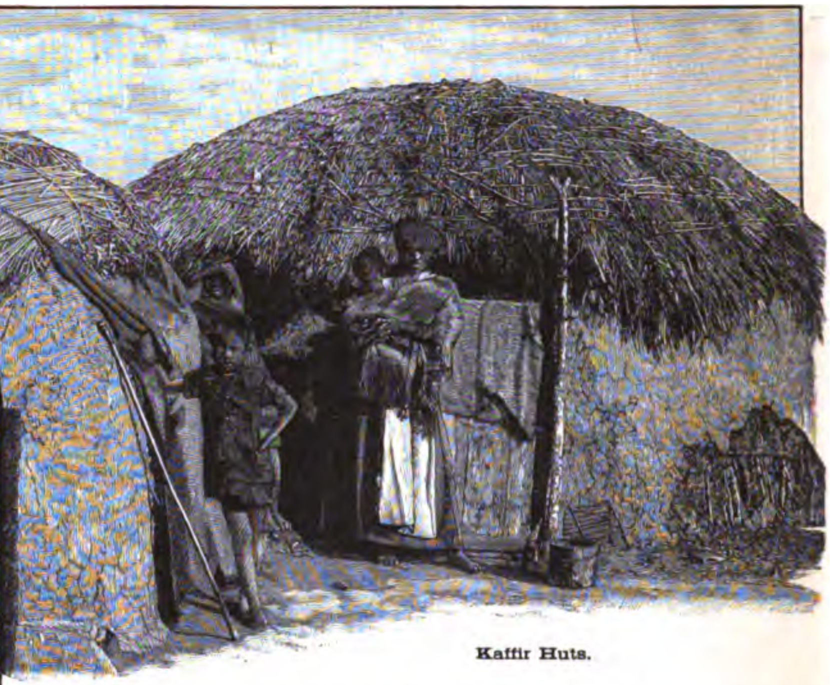
Everybody goes to bed at dark, for there are no lamps in the village. Isn't this a queer place? There are no books nor schools, and Tibbu never saw a picture. If you should show him the picture of a lion, he would run away.

The Negro children are very fond of music. They keep time well, and often make sounds like birds, running brooks, etc. They have many games, also, and like to dance and play ball.

Many Negroes have been taken from their homes in Africa, and sold as slaves. In our own land there are millions of black people, but they all are free.



HOTTENTOT HUT



Kaffir Huts.

Kaffir Girl and Baby.

Many tribes of people, called Kaffirs, live in the southern part of Africa. Their color varies from red-brown to black, but they all belong to the black race.

The Kaffirs make garden tools and weapons of copper and iron. They are a brave people, and have fought hard to prevent the white men from taking their lands.

The Kaffirs have herds of cattle, and they raise large crops of corn. Milk and corn are their chief articles of food.

Let us look into this Hottentot hut. Here are dishes made of baked clay, spoons and pans of tortoise shell, and skins filled with milk. For weapons there are clubs, bows and arrows.

Among the Hottentots women do all the hard work about home. They help also to tend the cattle and sheep.

The dress of these people is very simple. It consists of the skin of some animal, wrapped about the body. Chiefs wear the skins of wild animals, but the common people wear only sheepskins.

The Hottentots live in southern Africa. They often move from place to place in search of grass for their cattle and sheep. This is one reason why they dwell in tents.

Many white people have now settled in southern Africa. These have taught the tribes near them how to make better homes and to use better weapons. Other tribes still live in their wild state.

Does Tibbu live in a warm land or in a cold one?
Name some of the plants that grow in the Kongo basin.
Name some of the animals that are found there.
Describe the hut which Tibbu made.
Can you tell what the Kaffir huts are made of?
Tell how the Hottentot hut is made.

87. Japan and its People.

To-day we will visit the homes of the little yellow people who live on the islands east of Asia.

The girls and boys of Japan have round faces, bright black eyes and pearly teeth. They often have ruddy cheeks, though their skin is brownish yellow.

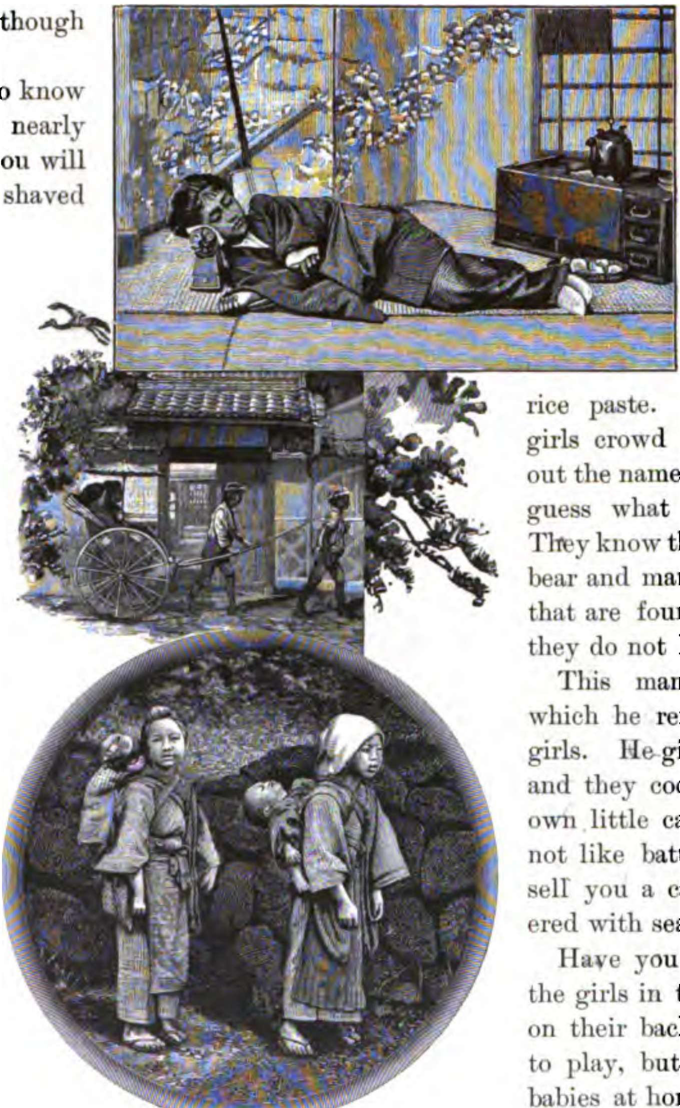
It will puzzle you at first to know which are boys, for they dress nearly like girls. Look closely and you will see that the boys' heads are shaved almost bare, while the girls' hair is twisted into all sorts of odd shapes.

What large sleeves! Let us look inside one of them. It is used as a pocket, and here are dolls, tops, small kites and many other toys. How should you like to wear a pair of their shoes? They are simply wooden soles tied on with strings. These shoes are not worn in the house, but are slipped off at the door.

The fathers and mothers of Japan do a great deal to make the children happy. You should be there on the day which is set apart for the "feast of the dolls."

Every girl has a set of dolls. Perhaps her mother used some of them years ago, but they are very pretty. Here is one that looks like the Mikado, or ruler of Japan. This one looks like his wife, and there are many other dolls like the nobles and ladies of high rank.

Each set of dolls has a full outfit for housekeeping. Here are tiny wooden pillows, soft mats and tea sets. On this happy day the whole land is alive with dolls.



Scenes in Japan.

Then there is the "flag day" for boys. On this day every boy plays with a set of dolls dressed like soldiers. Here are armies of dolls, with flags, guns, swords, cannon and pretty uniforms. At this time the boys hear many stories about the great warriors of their land.

The streets are lined with shops in which toys are sold. Here is a man on a street corner, shaping animals out of rice paste. The boys and girls crowd around and call out the names, as soon as they guess what he is making. They know the monkey, wolf, bear and many other animals that are found in Japan, but they do not know the sheep.

This man has an oven which he rents to boys and girls. He gives them batter, and they cook and eat their own little cakes. If you do not like battercakes, he will sell you a cake that is covered with seaweed and fish.

Have you found out what the girls in the picture have on their backs? They wish to play, but there are little babies at home who must be cared for. The girls tie the babies upon their backs, and are soon playing just as hard as the other children.

Shall we enter one of the houses? It is made of bamboo, and has very wide eaves. See the paper! paper windows, paper doors, paper fans, lanterns, hats, cups, cloaks, napkins and many other things.

A Japanese Village.

Isn't this a queer bed? Should you like to crawl into one of the wadded quilts, and rest your head upon the wooden pillow? This girl will soon wake and drink a cup of tea. Can you see the pretty tea set?

There are no chairs in the house. The Japanese sit on mats of wadded cloth or of straw. Sit on a mat, and your little friends will bring you a lunch. There is no table, but the boiled rice and steaming tea will be served on a dainty tray that stands on short legs. In some houses you would see meat, fish, beans and a grain called millet.

It would amuse you to see the people of Japan eat rice. Two slender chopsticks of wood or of ivory take the place of a spoon or a fork. You would find it hard to get the rice to your mouth, but see the skill of the little yellow people.

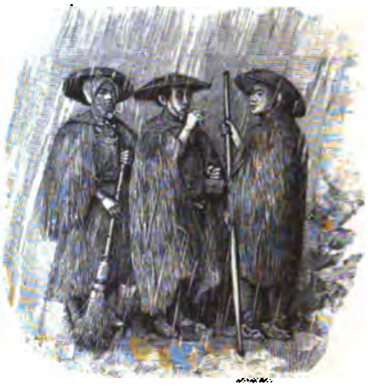
Street Scene in China.

A Chinese Village.

Peep into this workshop. Here is a man who is making beautiful vases of clay. Another is carving pretty figures in ivory. A third is spreading fine varnish over wood. Near by there is a room in which soft silk is being woven into costly cloth.

Now let us leave the city and take a trip into the country. Climb into this light cart and away we will go. There are ponies in Japan, but most people prefer to travel in the way shown in the picture.

What is this tall grass with feathery tops and long sharp leaves? It looks like corn but it is many times as tall. This is bamboo, of which many of the houses are made.



Rain Coats.

We know what grows on the flat land, for we have seen pictures of fields of rice in our own country. But what is this shrub with white flowers and green leaves? Oh, yes, it is tea, like that we saw on the plains of China.

Here is a puzzle! What are these little white and yellow rolls? They look like birds' eggs, but they are soft and silky.

Have you ever seen a spider spin its web? These soft rolls were spun by silkworms. They made the fine thread, and then wound themselves in these glossy prisons. It took about three days to wind each silken case, or *cocoon*, and if the thread were unwound it would reach more than two miles. Now you know where the people get the silk from which they make thread and cloth.

Some of the sports of the girls and boys of Japan are like your own. They spin tops, walk on stilts, fly kites and sometimes roll snowballs.

Most of the Japanese children are

always clean. They bathe in tubs of very hot water, just before going to sleep in thick quilts that are laid on the floor. They often have two or three baths a day.

The people of Japan are eager to learn, and they have very good schools.

They build great temples in the midst of beautiful gardens, for they are very fond of flowers.

Shall we follow the girls and boys to one of the temples on a holiday or festival day? They leave their little shoes or clogs at the door, enter the temple and stand clapping their hands softly. This is the way they offer their childish prayers. Then they go out and play in the gardens.

A Malay Girl.

A Malay Home.

Before we return home let us spend a few days in China.

As we enter one of the great rivers of China we see many houses built on boats. On the decks there are small gardens, and also coops for chickens.

The babies on these boats are tied at the ends of long cords, and the little girls and boys have light gourds or pieces of hollow bamboo tied upon their shoulders. These are to keep them from sinking, when they fall into the water.

The people of China are yellow and their eyes are set aslant. Some day we shall learn more about the house boats and the large cities of this land.

To what grand division does Japan belong? (See map on page 111.) What ocean is east of Japan?

Tell all you can about the clothing of the people of Japan.

What could you see in a Japanese house, that you cannot see in your own home?

Name some animals that are found in Japan. Name some plants that grow there.

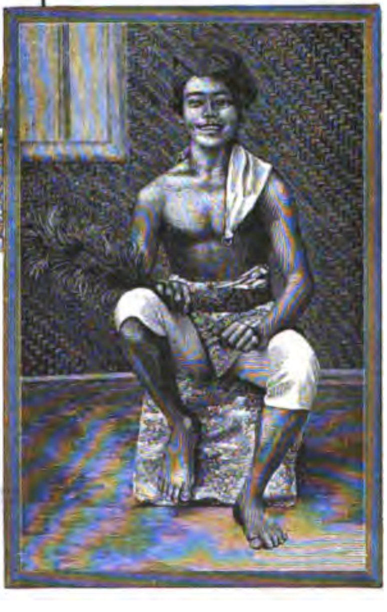
What is done in the workshops of Japan?

Name some of the sports of Japanese girls and boys.

88. Malay or Brown People.

Perhaps you think that this is a little negro girl, but she is not. Her skin is light brown, and her hair is long and straight. Can you tell why her eyes do not look like your own?

This is the brother of the little girl. Do you not think that his eyes are full of fun?



A Malay Boy.

These little people live on the island of Java, southeast of Asia. Java is a land of fruit and flowers. It is so beautiful that people often call it the "Pearl of the East." Should you like to visit the home of the brown people?

Here it is, — a pretty hut in a shady grove. The hut is made of bamboo.

Our little brown girl helps her mother keep this hut very neat and tidy. She stuffs pillows with soft white down that grows on a tree near by, and she weaves dried grasses into the mats that are used as beds. Then she covers them with pretty cloth.

Her brother pounds the yellow husks off the rice which they will have for breakfast, and he gathers a few cocoanuts and a bunch of ripe bananas. The fruit is eaten raw, but the mother cooks the rice till it is soft and white. Their only table is a mat, and all sit around it on the ground while eating.

Brown People of Fiji Islands.

Now they are ready for the day's work. The coffee berries are turning dark red, and the father says it is time to pick them. This will be the work of the mother and the girl, for the father and the boy must let water in over the rice fields.

A coffee tree is a pretty sight. It has rich gray bark, large green leaves and white waxy blossoms. In a few months the little seed pods of the blossoms grow into clusters of red or purple berries that look like cherries. Our little girl must be very careful, for while the berries are ripening other blossoms are growing on the ends of the new branches. These blossoms must not be broken off.

The berries are spread out to dry, then the pulp is pounded or rolled off, and out come the coffee seeds ready for market.

Java is very near the equator, and by ten o'clock the sun is so hot that work in the fields is stopped. Now the brown people sit in the shade of palm trees and weave baskets. When thirsty they break open cocoanuts and drink the cool milk that is inside.

The father says that snares must be set, for bats have been nibbling the corn and the tender shoots of the palms. Have you ever seen little bats that look like mice with wings? Some of the bats of Java are very large and are called *flying foxes*. During the day they hang in dark clusters in trees, but in the evening they flit about in search of food. This evening the snares and nets will be set to catch some of them.

By four o'clock the air is cooler, and the father goes back to the rice field. Now the little girl will help her mother spin cotton into yarn. Some day they will weave the yarn into cloth, and make new clothes for the whole family.

What is the little brown boy doing? There he goes tripping across the rice fields towards the south shore. He knows of a cave in which many swallows build their nests, plastering them upon rocks. These nests are made of a glue-like substance, and a few of them will make soup for supper. Many of these nests are sold to people of other lands.

A Java Girl.

Nearly all the girls and boys of Java dress like these in the pictures. While working in the sun the boys often wear large hats made of very thin strips of bamboo.

The brown people are called *Malays*. Most of them live on the large group of islands southeast of Asia. In some places the Malays have built cities, but the white man rules over most of the brown race. Many of the Malays are savages, like the people in the black tribes of Africa.

Find Java on the map on page 115. In what direction is Java from Japan?

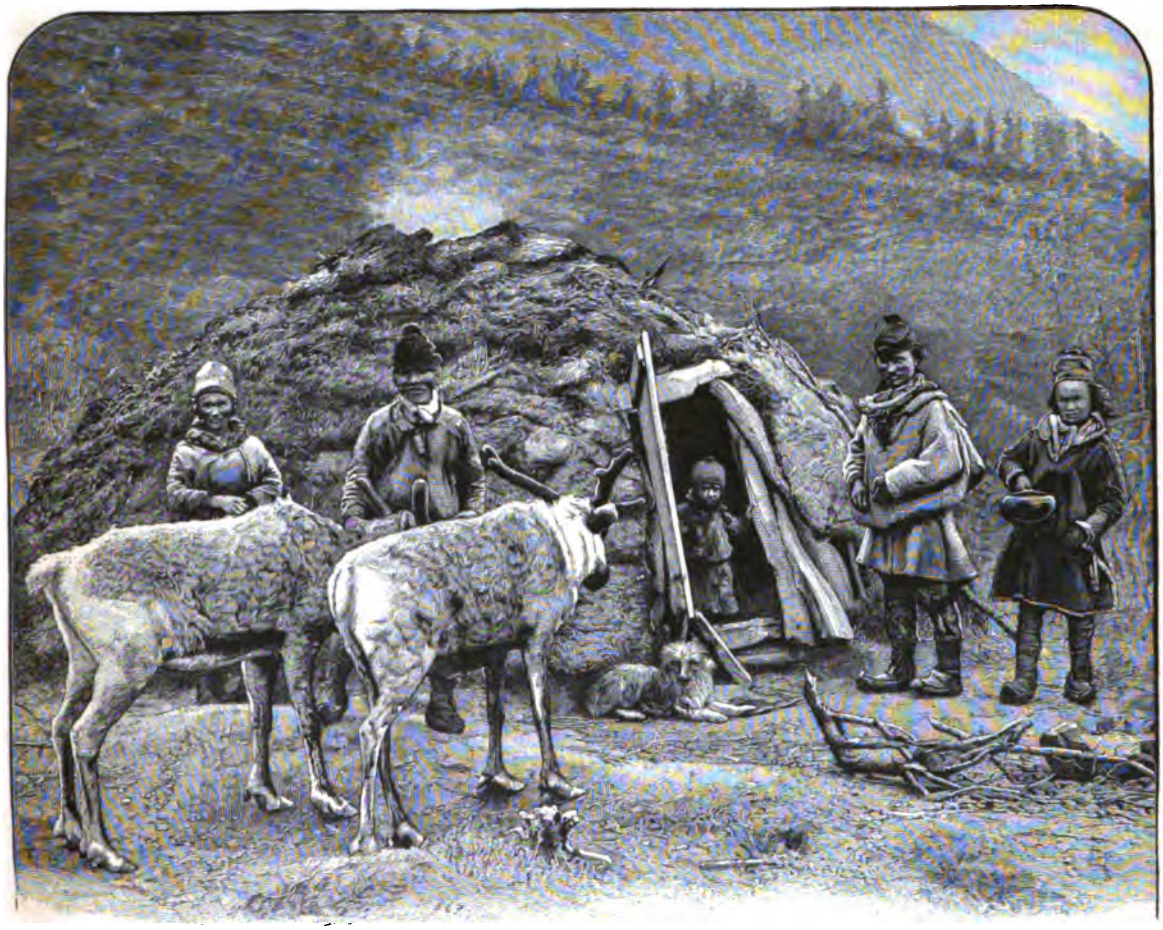
What new sights could a Javanese girl see in Japan? What could she see in Tibbu's home?

What do the people of Java eat? Of what are their clothes made?

89. A Lapland Home.

Does this family live in a warm land or in a cold one? Can you prove your answer by the picture?

Which has the warmest coat, the deer, the dog or the little boy peeping through the door?



A Lapland Home.

Isn't this a warm hut? See the thick sods upon it. Do you think that rain can leak through the roof? See how the sods are placed. What holds them up?

Why is the hut so dark? Can you see any chimney?

Come out, little boy, where we can see you. What large round eyes you have, and what a tiny flat nose! Your eyes are as straight as ours, but your face tells us that you are one of the little yellow people. Your sister, who is holding a dipper, has dark hair, but yours is soft and light.

Let us glance into the hut. What is in this bundle that hangs from the roof? It is a hammock made of the warm skin of a deer, and in it swings a pretty baby girl with eyes as bright and cheeks as soft as your own.

Should you like to know where these people live?

Their home is in the north of Europe, near the Arctic shore. They are called *Lapps* and they live in *Lapland*. Can you find Lapland on the map, page 109?

Ah! here is a snowstorm. Now we know why the Lapps wear boots with high tops bound tightly round their legs. Come! Let us hurry into the hut.

See the long strips of smoked meat hanging on the walls. Here are dishes of sweet milk also, and cakes of new cheese. Do you wonder that the Lapps are kind to their deer? Where do you think all this food came from?

Hammerfest.

Let us look at the boots and at this great hairy coat. Can you tell what they are made of? Some of the coats are made of cloth. At night the children sleep side by side between large warm deerskins.

Of course you wish to know what the reindeer feeds on. In summer it bites off tender shoots of trees and bushes, but in winter it paws away the snow to find a little gray plant, called *reindeer moss*.

It has stopped snowing. Now for a ride! Harness a deer to a sled and away we will fly over the snow. How fast we go! Will the fleet deer never grow weary? His master tells us that he has driven him a hundred miles in one day.

Should you like to live in Lapland? Do not think that there is snow on the ground all the time. As early as May the fields are dotted with pretty flowers, the birds sing sweetly, and later the bushes and vines are loaded with berries.

Perhaps you would like to live with the Lapps who catch salmon and trout in lakes and rivers, or with those who wander with tents from place to place, in search of good pastures for their herds of deer. You would find that the Lapps are very kind.

Hammerfest is a town that the Lapps often visit. It is the farthest north of all the towns of Europe.

Where do the Lapps live?

What are the uses of the reindeer?

Can you tell some of the sights that Tibbu often sees, but that the Lapland boys never see?

What would the Japanese boys miss if they went to Lapland to live?

Why does Tibbu not wear clothes like those which the Lapland boys wear?

If you were to go into a Lapland hut, what should you expect to see?

90. Chuglu, the Eskimo Boy.[1]

If we knew the words that little Chuglu uses, he could tell us a wonderful story about the land of snow and ice in the far north.

Here is a picture of the hut in which he lives. It is built of stones, with turf thrown upon it to keep out the biting wind. The hut is now covered with snow. During the summer Chuglu lives in a tent made of deerskins.

The Eskimos are found along the north coast of North America, and on the islands near by. They live also along the southwest shores of Greenland. Find Greenland on the map, page 105.

When Chuglu was a baby his mother kept him in a bag of feathers. That was his cradle and his bed. Day after day he lay in the smoky hut, till he was old enough to walk, and then his mother made him a very pretty suit of sealskin clothes.

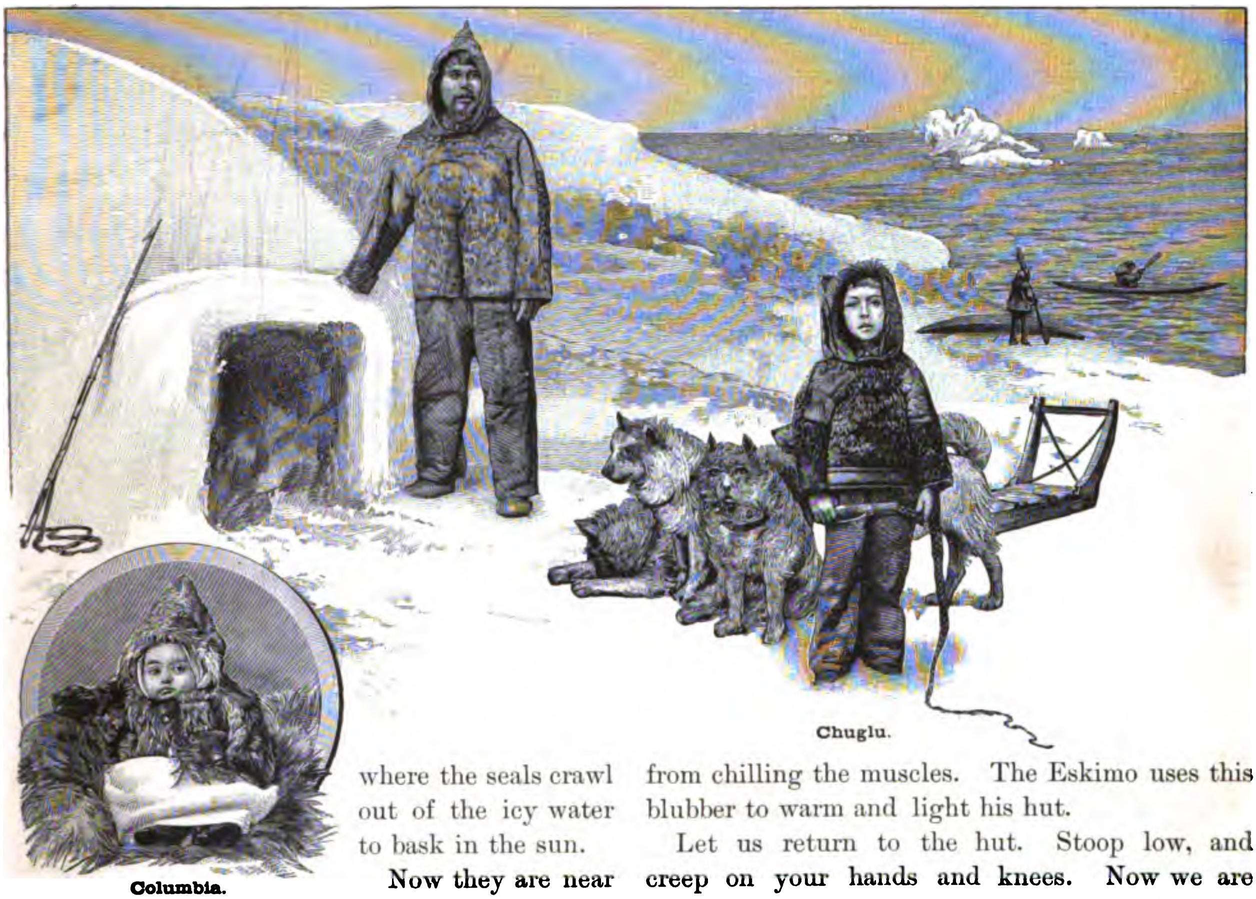
---

[1] Chuglu was one of the Eskimos at the World's Fair in Chicago. The baby, Columbia, was born on the World's Fair grounds.

On his jacket she sewed a fur hood that he could draw over his head on very cold days.

The mother has a large hood on the back of her own jacket, and many a cozy nap has Chuglu taken in this hood, before he could walk.

At length Chuglu is old enough to go out and see his father hunt seals. Bring out the sled and harness the dogs! *Snap!* goes the long whip, and away they glide over the snow. The father knows where the seals crawl out of the icy water to bask in the sun.



Chuglu.

Columbia.

Now they are near the place. Chuglu is left with the dogs, while his father creeps up behind a huge block of ice. Yes, there are the seals! A rush, a blow, and one unlucky creature is held on the end of the sharp spear.

It seems very cruel, but Chuglu must have food, and now he can eat the flesh of the seal. His mother will also make a new jacket of soft fur for him.

It is great sport for the Eskimo to chase a whale. He paddles his canoe, or ***kayak***, very swiftly, and throws his harpoon with great skill.

The kayak is long and narrow. It is covered with sealskins. The skins are sewed over the top of the canoe, making it water-tight in all parts. Eskimos are so skillful that when a kayak upsets they can right it again in the water.

Under the skin of the whale there is a thick layer of fat, or *blubber*, which keeps the icy water from chilling the muscles. The Eskimo uses this blubber to warm and light his hut.

Let us return to the hut. Stoop low, and creep on your hands and knees. Now we are inside. Can this be the home of little Chuglu? How does he breathe in such a close and smoky place?

Look at the lamp. It is a hollow stone, with moss for a wick. Where did the oil come from? The lamp smokes, but it keeps the hut warm.

Along one side of the room there is a long bench. During the day it is used as a seat, but at night it forms the family bed.

Look at Chuglu as he takes off his jacket and boots. He wears a shirt of birdskin, and stockings of dogskin.

Inside an Eskimo Hut.

Now we can see his face clearly. The bright black eyes are aslant, the hair is coarse and black, and the skin is yellowish brown. Perhaps Chuglu belongs to the same great family as do the children of Japan, China, Lapland and Java.

Dinner is ready. Will you dine with Chuglu? He will have a feast to-day, for his mother has given him a large piece of blubber. His father is eating a slice of raw frozen flesh. Now he helps himself to a piece that has been boiled.

In this cold region no grain grows, and so these people have no bread. There is no fresh milk nor cheese such as we saw in the Lapland home, for Chuglu's father has no tame deer.

Some days they eat fish and sea fowl, and when Chuglu's father kills a great white bear, its flesh feeds them for a long time.

Eskimos often move from place to place, to find seals and fish. Sometimes they hunt far out over the frozen sea. When they settle in a place for a short time only, they make huts out of blocks of snow, with ice for windows.

White people often visit the cold seas of the north, in search of seals and whales. These people give or sell to the Eskimos, knives, needles, cloth and other articles.

In making clothes the Eskimo women are very skillful. They cut the sealskins to fit well, and then sew them neatly together. Do you not think that Chuglu has on a pretty jacket?

In autumn the days at the far north are very short. Then the Eskimos hunt all the time while it is light. They store up food for the long winter nights that are near at hand. Some Eskimos live in places where the longest night lasts many weeks. In summer there is a day that is just as long.

Should you not like to watch the sun during the long day? Every noon it is in the south, and at midnight it is in the north, but it does not dip below the horizon. By and by you will learn the reason for this.

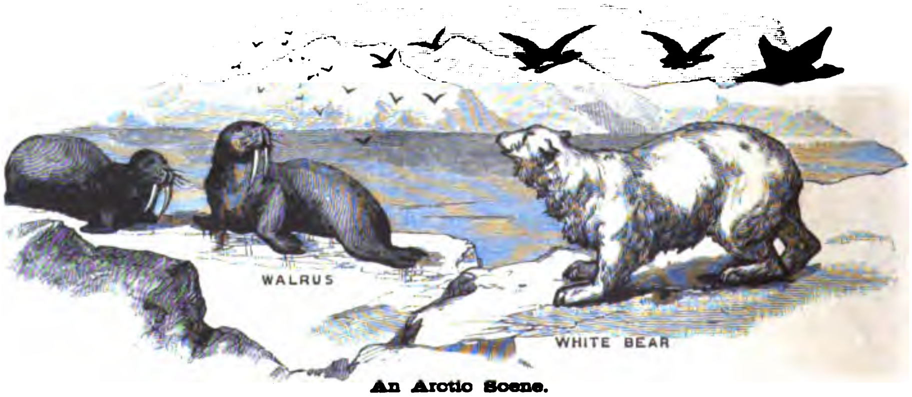
Can you find out how Chuglu's sledge is made?

Where do the Eskimos live? North

Describe an Eskimo hut. What do Eskimos eat?

What strange sights would a Lapland boy see, if he were to visit Chuglu's home?

What objects in your home would seem strange to Eskimo children?

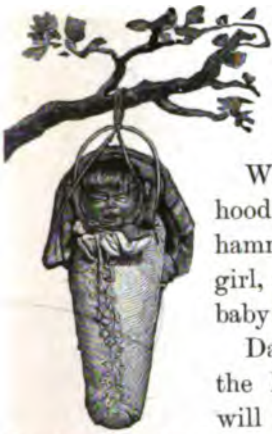


An Arctic Scene.

Which people wear the best clothing, those of Java, of Japan, of Lapland or of the northern coast of North America? Give a reason for your answer.

91. Children of the Indian Tribes.

Can you tell what is in the cradle that hangs on the tree? It is a tiny baby with round black eyes and red-brown skin.

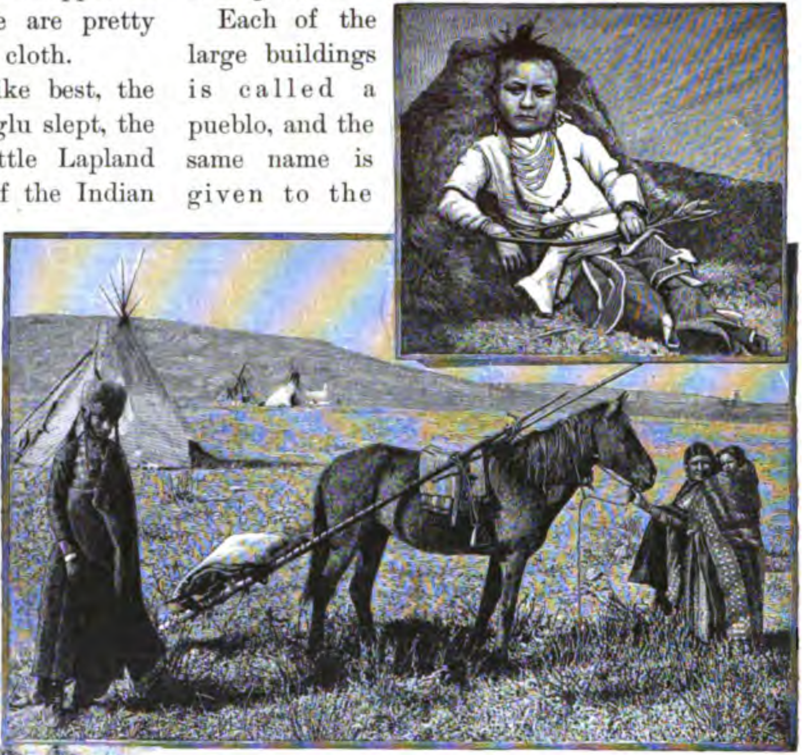


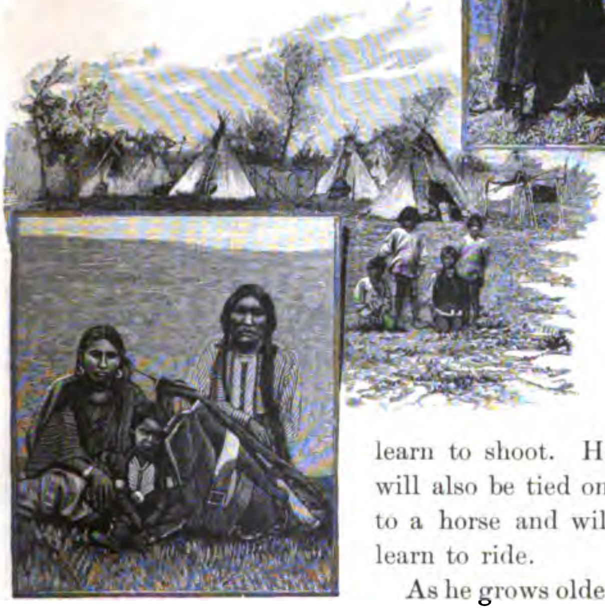
This cradle is made of a piece of board, wrapped in cloth. There are pretty beads on the cloth.

Which do you like best, the hood in which Chuglu slept, the hammock of the little Lapland girl, or the cradle of the Indian baby?

Day after day the Indian baby will swing from the branch of a tree. He will also take long journeys on his mother's back.

When those chubby fingers are strong enough to use a bow and arrows, the little Indian boy will learn to shoot. He will also be tied onto a horse and will learn to ride.





Indians and their Camps.

As he grows older he will run races, wrestle, swim, play ball, hunt and fish.

Can you tell what holds the tents up? What do you think the tents are made of?

Some tribes of Indians live in good houses made of wood, brick or stone. These have large herds of cattle and fields of grain.

In some places many families live in one large house or *pueblo*. It is made of stone or of brick dried in the sun. On page 104 there is a picture of a pueblo.

Each of the large buildings is called a pueblo, and the same name is given to the whole village. Some of the tribes that live in pueblos have large fruit groves and grainfields.

Let us visit an Indian camp in the evening.

Here is a drum made by stretching a skin over a hollow log. The beating of this drum calls the tribe to an evening dance round the camp fire. At first the dancers move slowly. Then the drum beats faster and the dance becomes more rapid, till it breaks into fierce leaping and yelling, as if the Indians were fighting a battle. The children look on with delight. Some day they will go through the same dance. This evening they listen to stories of the brave deeds of their fathers, and then they go to their tents to dream of the time when they will be warriors.

The Indians are very skillful in making bows and arrows, but their chief weapon now is the rifle.

The red-brown man taught the white man how to make canoes of birch bark, and shoes of soft deerskin. The dusky savage also showed the paleface how to make corn grow in a forest. The trees were first killed by cutting a ring of bark from their trunks, or by burning off the bark. The hot sun could then ripen the corn, as there were no leaves to shade it.

Is there nothing to say about **the** Indian *girls?*

While the boys are wrestling or hunting, the girls must stay at home and work. They must learn to cook, to hoe in the garden, to skin the animals that have been killed, and to take down and put up the tents when moving camp. They must also help to carry all the tents and kettles from place to place.

The little Indian girl finds some time for play. She is very fond of dolls. What kind of dresses do you think she makes for her dolls? What kind of playhouse does she like best?

Caravan.

Indians are found in nearly all parts of South America, and in the western part of North America. Only a few tribes live east of the Mississippi river.

The number of Indians in the United States is small. There are about as many here now as there were when the white men first settled in America.

Where are Indians found? Can you draw an Indian's tent?

What has the Indian taught the white man?

If an Indian girl were to visit Japan, what strange sights would she see? What could an Indian girl teach a Lapland girl?

92. The Land of the Arabs.

We start to-day for a land that lies far to the southeast of the isthmus of Suez. The first part of our trip is to New York. Can you show on the map the shortest route by water from New York to the isthmus of Suez?

It will take about two weeks to cross the ocean and the long Mediterranean sea.

Now we are passing the great rock of Gibraltar near the strait that opens into this long sea. What grand division is this on the south? What one is on the north?

Here we are at the isthmus. A small boat is waiting to take us from the steamer to the land. We are just in time, — a caravan starts to-day for the very place we wish to visit.

We must travel on the backs of camels, as our route winds across a wide desert. Here is a camel kneeling for you. Now you are on,—hold fast while it rises.

Let us wait a few minutes near the great Suez canal.[1] Here is a long line of steamships ready to pass through. Should you like to look inside these ships and see what they carry? This one is from southeast Asia. It is loaded with tea, cotton, silk and grain. This cargo will be carried to the British Isles.

The steamer from which we landed is bound to Australia. Below its decks there are thousands of yards of cloth and many kinds of machines and tools. This ship will bring back a cargo of wool.

Now the caravan is ready to start. We turn our faces towards the southeast, and soon lose sight of the little city by the canal. How dry and sandy the land is, and how hot the air!

---

[1] On page 51 there are two views of this canal.

We camp to-night near this well of cool water. In the early morning we are off again, and at about ten o'clock we reach another well. Here we rest till the sun is low.

Arab Family.

Days pass, and we are still in the midst of the burning sands. Now the wells are far apart, and we must carry water in bags made of camel's skin.

It is noon, and we have halted for the day. How the sun beats down!

See the dust whirling towards us! What is going to happen? The camels are burying their noses in the sand.

We must be quick, or a hot whirlwind will reach us before we are ready for it. Place a piece of cloth on the sand, and press your face hard down into it. While the hot wind is passing, you must breathe the air that is in the sand.

Now the wind is here. We are stifling! It seems as if hot coals were burning our bodies. The whirling sand almost buries us. Five minutes pass. They seem like hours. Now the camels are raising their heads, and the storm is over. This is the *simoon*, or stifling wind of the desert of Arabia. Where is this desert?

As we travel over the hot sand, clouds of locusts fly about us. They look like grasshoppers. Bees and wasps swarm upon the rocks that jut out of the sand. Countless scorpions, with poison stings, creep over the dry surface.

The plant life is scanty. The camels find a few tufts of coarse grass, sharp thistles and cactus plants.

Our route now leads over higher land. Here and there we see tents pitched under spreading date palms. In the distance low mountains rise on the plain. To-morrow our journey will end.

Here we are at last in a land of flowers! It looks like a vast island-garden in a sea of sand. Mile after mile of groves and grainfields stretches away to the south. This is the land of the Arabs.

Should you like to go to school with these Arab boys? They are reading the Koran, which is their Bible. Listen to the strange words which tell them not to press wine from grapes. In all this fair land no wine is made from grapes, but the fruit is eaten.

The Arab boys are dark, but they belong to the white race. Have you not seen boys that look like these?

School is over for the day, and our little friends will show us their homes. First we must see the horses.

How the Arab loves his horse! He oils its hoofs so that the hot sand will not crack them. He chooses for it the finest grass and the purest water, and often feeds it on dates and barley. He places no cruel bit in its mouth, but guides the noble animal by pressing his knees against its sides. The Arabs have the most beautiful horses on earth.

Arab School.

Next we will look at the camels. These animals are more useful than horses to the Arabs. One kind of camel is used for speed, and another for carrying heavy loads. The former will run one hundred miles a day, and in the cool part of the year will sometimes travel eight days without drinking.

Date Palm.

Camels are to the Arabs what reindeer are to the Lapps. For supper to-day we shall drink the milk of the camel, and eat its boiled flesh. We shall have fresh butter and cheese, but these are made of goat's milk.

The hair of the camel is soft and fine. It is used in making cloth. The tents of the Arab tribes that live in the desert are made of this kind of cloth.. We need not stop to look at the sheep and cattle, for we can see many like them in our own land.

Let us go into the gardens. Here are bright flowers, and the scent of sweet herbs fills the air. The stifling wind never reaches this fertile region.

Studying the Koran.

As far as the eye can reach, beautiful date trees wave in the valleys. For breakfast to-morrow we shall have fresh dates and also sweet cakes made of the same kind of fruit. The date in Arabia takes the place of wheat as used in our own land, of rice in Japan and of fruit in Java.

Should you like to look into one of the wells? It is only a few feet in depth, and the sides are built of stone. In the desert the wells are much deeper. All the gardens of this land are watered from wells, for the seasons are often very dry.

Coffee is the chief drink of the Arabs. The coffee berries grow on the hilly lands, near the strait that forms the outlet of the Red sea.

Some Arabs live in good houses of stone or of wood. The people are very kind and polite, and we are sorry to leave the dusky white boys, but we must begin our long journey back to the dearest land of all, — America.

What bodies of water should you have to cross in going from your home to Arabia?

Of what grand division is Arabia a part?

In deserts, why are camels more useful than horses are?

Name some animals that are found in Arabia?

Inside of an Arab House.

Of what use are camels to Arabs?

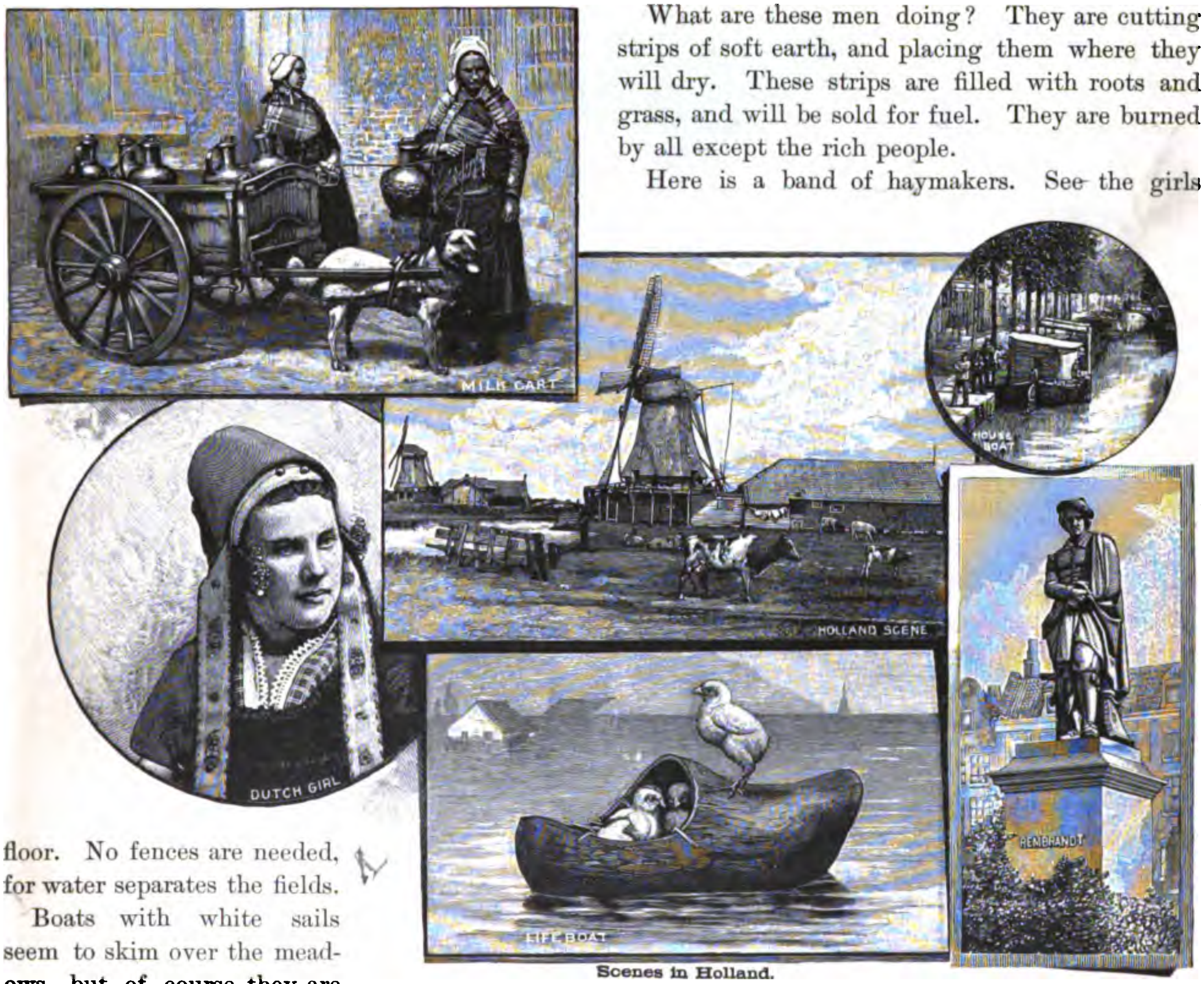
What do Arabs eat? What berries that grow in Arabia are used to flavor drink?

Where else does coffee grow?

93. Children of the Lowlands.

To-day we will visit Holland, the land of canals.[1] It is on the low plain through which the river Rhine flows to the sea.

This land is crossed by a network of canals and ditches. Its wide meadows look as level as a floor. No fences are needed, for water separates the fields.



Scenes in Holland.

Boats with white sails seem to skim over the meadows, but of course they are in the canals. In handling the boats, girls are often more skillful than boys.

Some of the children in Holland are born on boats, and spend their lives floating about the canals. They go from place to place where their fathers find work. When they are old enough they have boats of their own.

Let us take a trip on one of the house boats.

See the long rows of windmills! They are pumping water from the low fields into ditches. When the corn is ripe the windmills will help grind it to meal.

What are these men doing? They are cutting strips of soft earth, and placing them where they will dry. These strips are filled with roots and grass, and will be sold for fuel. They are burned by all except the rich people.

Here is a band of haymakers. See the girls working in the field. Yes, the mothers and sisters in Holland often make hay, dig potatoes, sow grain, hoe corn and do all kinds of hard work. They even help to draw the boats along the canals.

What queer shoes the horses wear in the fields! They are flat boards tied under the hoofs. Why do they wear them?

---

[1] Holland is also called *The Netherlands,* which means *lowlands.* This name appears on the map, page 100.

A large part of this low land is very soft and boggy. It seems like a wet sponge. The ground trembles under even the little children at play. If it were not for wide shoes, the horses would sink deep into the soil.

What a land this is for the barefoot girls and boys! They can splash in the puddles, wade in the ditches, sail boats on the canals and catch fish nearly everywhere.

Scene in the Alps.

You should see the children in winter, when the canals are frozen. How swiftly they skim over the ice! For miles and miles the canals are then alive with skaters!

Poor children use wooden skates, but they have much fun. People go to market on skates. Here is a little girl going to sell a basket of eggs. She will bring back a small red cheese and a loaf of bread about two feet long.

Should you like to wear wooden shoes? Of course you would take them off at the door, and not wear them in the house. Do you not think that our leather shoes are much better than wooden ones?

Here we are at a bridge. Our house boat cannot pass till the bridge is raised. The men who move the bridge swing out to us a little wooden shoe on the end of a pole and line, and we drop into it a small piece of money to pay them for their work.

Now we are near a city. It looks like a forest of masts, trees and steeples. Boats, boats everywhere! The houses are very neat. Perhaps the kitchen is the front room, but what of it?

Should you like to live in Holland?

What large river flows across the plain of Holland?

Where does the Rhine river rise? In what direction is Holland from the Swiss plateau?

What is a house boat? Are the rivers of Holland swift or slow?

What do the people of Holland use for fuel?

Of what use are windmills to the people of Holland?

Of what use are canals?

Name some of the plants that grow in Holland.

94. Children of the Highlands.

Let us leave the "land of canals," and sail far up the river Rhine. Hans, a Holland boy, will go with us to visit the Swiss boys who live on the plateau near the high Alps.

Here we are in a pretty village, close by the snowy peaks. Wilhelm, a little Swiss boy, comes down the road to meet us.

How strange the place looks to Hans! He has always lived on low land by the sea. Now for the first time he sees great rocky ranges upon which snow lies all the year.

What do you think that Hans misses most? Yes, the quiet canals. In Wilhelm's home no white sails seem to skim across rich meadows. Many of the Swiss streams rush and roar over steep, rocky beds. Hans feels of the water and finds it icy cold. Wilhelm says that it flows from a long glacier.

The Swiss village is all alive to-day. Spring has come, and the flocks must be driven up the mountains to feed.

The men who go with the flocks will be away from home till near the end of summer, and many carts are loaded with food and bedding for them. Hans and Wilhelm are very happy, for they are going on the long trip.

When all are ready they set out with long lines of cattle and sheep. The flocks graze for a few days at the foot of the range, then as the snow melts they climb higher. In the valleys they find the grass green and tender. Here they will graze till the snow drives them down the slope.

Hans and Wilhelm help to tend the flocks, and then they play by the swift streams, or search for wild flowers. Once in a while they catch a glimpse of a nimble *chamois* or an *ibex*, as it leaps from crag to crag far above them.

The chamois looks partly like a deer and partly like a goat. It is very shy, and has keen scent and sight.

In winter this little creature feeds on tender shoots of fir and pine trees. In summer it is found close to the lower edge of the snowcap on the highest peaks.

Wilhelm's Home.

The chamois is noted for its long leaps from rock to rock, over deep chasms. It is very playful, and is often seen sporting about in the light feathery snow.

Often at night the boys lie awake and listen to the ice cracking and groaning, as it winds slowly past their cabin. Wilhelm says that the glacier walks and talks.

One day when the boys are far up the mountain side, they see a great mass of ice and snow slide into the valley. At first it moves slowly, but soon it crashes along, sweeping all before it. Large trees snap and break. Huge rocks whirl down the slope. The earth trembles, and the flying mass gives out an angry roar.

That evening Hans tells a story about the sea breaking through the dykes of Holland, and flooding his father's field. Wilhelm tells about the soft snow that slid down the mountain side last winter, and buried the village in which he lives.

Remains of a Snowslide.

Weeks pass, and at length the snow creeps down the mountains, into the high valley where the flocks are grazing. They must at once start for home, or they may be caught in a blinding storm.

It is the middle of September, and the village is dressed for a holiday. To-day the fathers and elder brothers come home with their flocks from the mountains. The girls and boys march out with bells and flags to meet them. They all return shouting and singing.

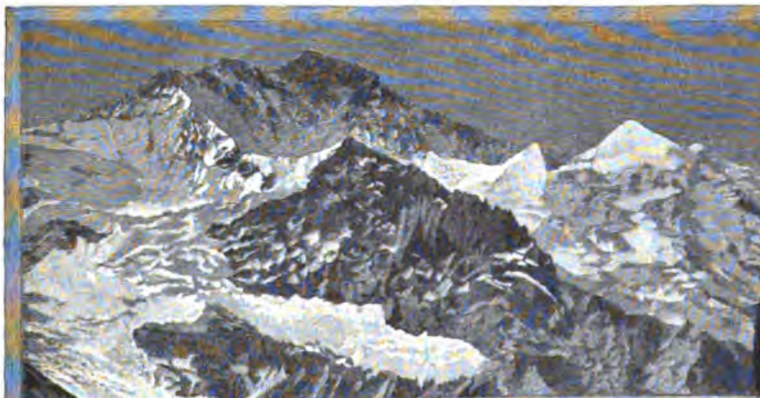
The day is given over to sports and games. The young men wrestle, run races and shoot. In the evening bonfires are kindled, and many dancers keep time to music. In the midst of the festival a heavy snowstorm begins, showing that winter is at hand. How strange it all seems to little Hans.

What have the girls and boys in the village been doing all summer?

They have helped their mothers mow grass, plait straw into hats, and take care of the cattle that were not driven to the mountains. They have also milked the cows and goats, and have made butter and cheese.

Have you ever seen a churn? In this Swiss village the merry little streams are set at work turning churns. Milk and cheese are leading articles of food. Very little meat is eaten. Many potatoes are raised, and these often take the place of bread. Dried apples and pears are also used for food.

Every year many thousand people visit the Alps to see the snowy peaks, the long glaciers and the mountain lakes. Many young men earn a living by serving as guides to the visitors. One of the pictures on this page shows a party climbing an ice point on a glacier.



A Glacier.

Wilhelm has met girls and boys from many lands. He has heard them tell of great ships that sail on the ocean, and of vast level lands, called prairies. Next year he will visit Hans and will see many strange sights along the canals.

An Ice Point.

Now the time has come for Hans to return home. He will remain a few days in the beautiful Swiss cities of Geneva and Bern, to see the great workshops. Here he will watch the people spin silk, and weave cotton and wool into cloth, but this will not be new to him. He has seen the same kind of work in the cities of Holland, near his own home.

Where is the Swiss highland?

Why are many of the streams of this highland very swift?

Where do glaciers come from?

Describe a Swiss cottage. Can you tell why heavy stones are placed on the roofs of cottages?

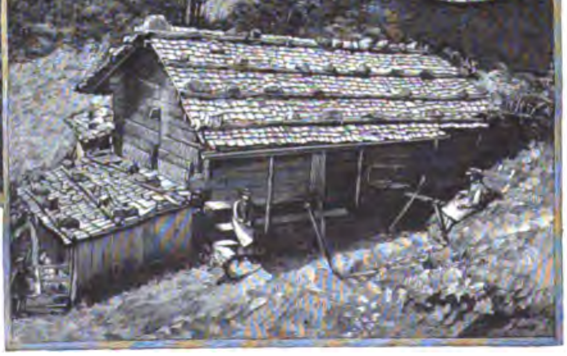
What kinds of work can the girls and boys of Switzerland do?

What do the people of Switzerland use for food?

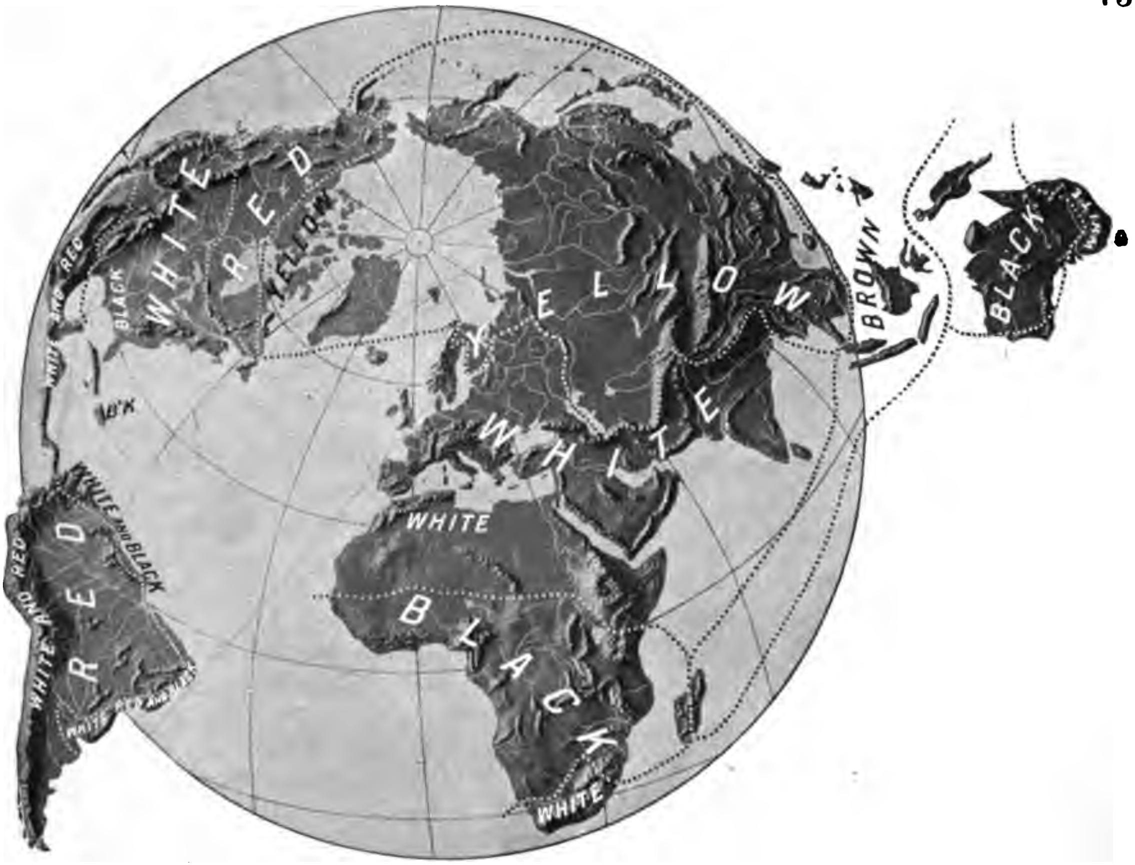
Name six animals that Swiss boys see.

What kinds of goods are made in Swiss cities?

Find Switzerland on the map, page 109. In what direction is it from Holland?



A Swiss Cottage.



95. Homes of the Races.

People live in nearly every land. Of course there are many more people in some places than in others, and we have seen that all do not look alike.

Most of the black tribes live south of the desert of Sahara and in Australia.

The "red men," or red-brown tribes, are found in many parts of America.

The people of the brown race make their homes mainly on the islands southeast of Asia.

The yellow people live in the river basins of Asia and Europe sloping to the Pacific and Arctic oceans. They are also found along the Arctic coast of America.

In the Old World the home of the white race is between the lands of the black and the yellow races.

The map will show what parts of America and Australia are now held by white people. Page 87 tells about the people of the land in which we live.

96. Homes of the Nations.

A long time ago Europe was the home of many tribes of white people. Some tended their flocks and others tilled the soil.

The tribes often fought for the best lands. Those that lived on wide plains were open to attack from all sides. In some places ranges of mountains and arms of the sea kept the tribes apart.

Here and there a strong tribe would conquer many weak ones, and a single chief would rule over all. Perhaps he would add to his land till it reached to the sea, to a wide river or to a range of mountains.

In these and in other ways, the small tribes grew to large ones, under a few rulers. As years rolled by, the people of each large tribe learned to use the same names for things about them. After a time they began to trade with other tribes, and to learn how they did their work, how they dressed and what they thought.

At length people found out how to print books from type, and then they became much wiser. Now, of course, they have fine schools, beautiful houses and railroads. Thus the tribes have grown to *nations*, each having its own land and its own rulers.

For ages and ages nations have been growing in nearly all lands, but there are still many savage tribes. The home of a nation, or the land in which it lives, is called a *country*. The city or town in which the laws of a nation are made is called the *capital* of the country.

A nation may be a part of one race, or it may be made of people of two or more races.

97. Map Studies.[1]

North America.[2]

In what country do you live? What ocean is on the west? What other bodies of water help to bound the United States?

What country is north of the United States? What ocean is north of Canada? What ocean is on the east? On the west? What great bay indents the north coast? What bodies of water lie between Canada and the United States?

What country is south of the United States? What ocean is west of Mexico? What body of water is on the east? What river flows along the northeast border of Mexico?

Where are the West Indies? Name the largest island of this group.

South America.

What large river basin is almost wholly in Brazil? Which part of Brazil is a low plateau? What ocean is on the east?

Where is Chile? What is its shape? Into what ocean do the streams of Chile flow?

Name the long country east of Chile. What divides the two lands? Name the river system that drains the northern part of the Argentine Republic.

Europe.

Where are the British Isles? What sea is on the east? What ocean is on the west? Where is Ireland? Where is Scotland? Where is England?

What country covers the greater part of the lowland of Europe? Name the largest river basin in Russia. What bodies of water touch the shores of Russia?

What country lies north of the Swiss plateau? Upon what seas does Germany border?

Between what countries are the Pyrenees mountains? What bodies of water partly bound Spain? What bodies of water partly bound France? In what country is the greater part of the Rhone basin?

Where is Italy? What is its shape?

What large country is in the middle part of the Danube basin? Name the countries that lie north of Austria-Hungary. On what sea does Austria-Hungary border?

Africa.

Where is Egypt? What large river flows across it? On what seas does Egypt border?

What river system drains the Kongo State?

Asia.

In what country is the Ganges basin? What highland is north of India? What ocean is on the south?

What large country is east of Tibet? In what direction do the great rivers of China flow? What ocean is east of China?

Where is Japan? What vast country covers the northern part of Asia? What oceans border on Siberia? What country is west of Siberia?

Australia.

Where is New South Wales? Where is Victoria?

---

[1] Many teachers may prefer to omit these map studies.

[2] For answers, study the colored maps on pages 105 to 115.

HEAT, WIND AND RAIN.

98. A Home Lesson for a Hot Day.

Find a place where the sun shines upon sand or upon hard bare ground.

Hold your hand one inch from the sand or the bare ground, then one foot away, and three feet away. In which place is the air warmest?

Find a flat rock. Can you feel heat coming from it?

Place your hand near the sand and then near some water that stands in the sun. Which is warmer, the *air* above the water or above the sand?

99. How the Air is Heated.

On a clear summer day, how hot the air is over a sandy field, and how cool a breeze from over the sea.

A flat rock in the sunshine may be hot, while green grass close by it feels cold. On very hot days, why do we like to sit in the shade?

The sun warms the surface of the earth, and the earth then warms the air just as a stove does.

Dust and clouds also receive warmth from the sun, and help to warm the air about them. Can you now tell why the air becomes cooler when heavy clouds form between us and the sun?

When the sun is shining, some parts of the earth become warmer than other parts. For this reason, the air in some places is warmer than it is in others.

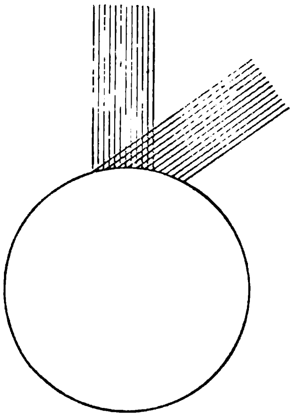


Figure I

100. How the Earth is Heated.

Let us suppose that the straight lines in figure I. are rays coming from the sun to the earth at noon and also at about nine o'clock in the morning.

Count the slanting rays. Count the vertical or upright ones. Which rays spread out farther over the surface of the earth?

The more nearly overhead the sun is, the thicker its rays reach the earth. In the morning, when the sun is low in the sky, the rays are very slanting, and the earth warms slowly.

Which part of a day is generally the warmest? Why does the earth become cool or cold in the evening?

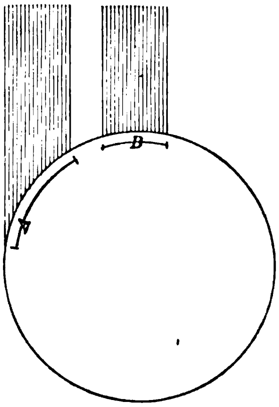


Figure II.

In summer the sun shines higher in the sky than it does in winter. In the coldest part of the year, the sun's rays are more slanting than they are in summer.

On places near the equator, the sun shines almost straight down every day in the year, and makes a wide *hot belt* round that part of the earth.

As we travel north or south from the hot belt, the sun's rays become more and more slanting, and therefore we reach cooler and cooler parts of the earth. Round the poles there are wide regions of ice and snow.

In figure II., as many rays fall upon B as upon A. Over B the rays are nearly vertical, but over A they strike the surface with greater slant.

Which is the wider space, A or B? Upon which do the rays strike nearer together?

Figure II. shows that while the sun is shining nearly straight down on the hot belt, its rays fall with more slant on other parts of the earth.

101. High and Low Land.

The alpaca lives near the equator. Look at its long wool. Do you not think that this little animal suffers from heat? The wool is very fine, and is made into cloth. Have you ever seen any alpaca cloth?

Alpaca.

The alpaca looks like a little camel, but it does not live in a sandy desert. Each toe has a tough sole to help climb rocky places where the alpaca goes to find grass.

The home of the alpaca is high among the Andes. Even in summer it can see snowy peaks only a little distance above the places where it feeds. Do you think that the alpaca needs its warm coat of wool?

Some mountains near the equator are very cold. The sun often shines straight down on lofty peaks that are covered with snow.

The thin pure air on high plateaus and mountains is colder than the air of the lowlands which are at the same distance as the highlands from the equator.

Storks of Strassburg.

102. The Seasons.

Which is the coldest part of the year? Which is the hottest part?

What season comes before summer? What one comes before winter?

Can you name three kinds of fruit that ripen in autumn? Three in summer?

In what season do most of the wild flowers blossom?

What can you see on a winter day that you cannot see on a summer day?

What games do you play in winter? What ones in summer? In spring? In autumn?

Which season do you like best?

A Snowstorm.

103. Change of Seasons.

Once a year the earth goes round the sun. The path of the earth is almost a circle, with the sun near its center. For six months the vertical rays of the sun fall north of the equator. During the other half of the year they fall south of that line.

While the sun is north of the equator we have spring and summer. While it is south of the equator we have autumn and winter. When it is winter on one side of the equator it is summer on the other side.

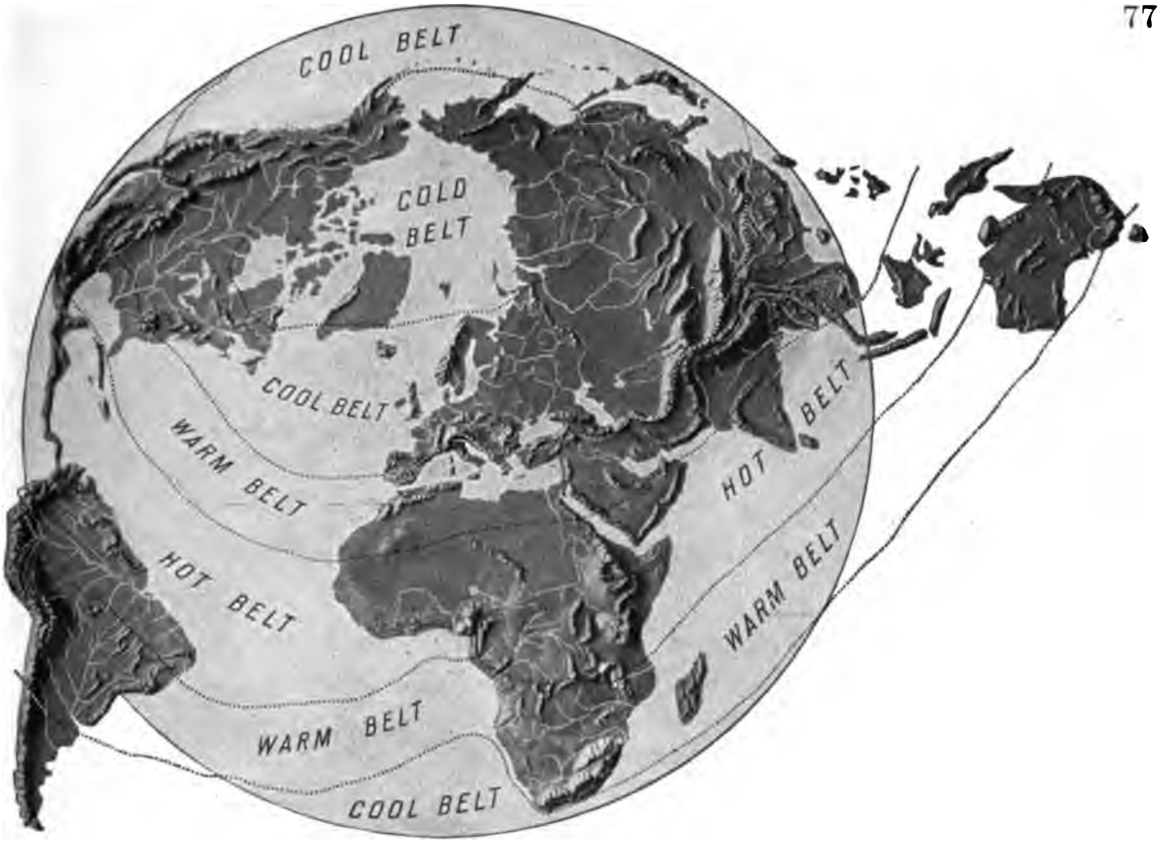
104.

A Sign of Spring.

One sign of spring is the coming of the storks. They visit nearly all parts of Europe, going as far north even as Lapland.

The storks make their nests of sticks on the tops of buildings and in tall trees. There they lay their large white eggs. These birds are always welcome, as they are thought to bring good luck.

When the cold season begins in Europe, the storks fly south. They cross the great sea and visit Africa.



Some of the storks wade along the shores of the Nile, searching for frogs, snakes and fish. Others feed in the swamps and marshes of the lake region, where the Nile rises. Still others fly to the far-off southern part of Africa, where summer reigns while it is winter in Europe.

What does this lesson tell about the seasons north and south of the equator?

Strassburg is in the upper part of the valley of the Rhine.

105. Belts of Heat.[1]

What river basins does the equator cross?

What rivers flow into the Arctic ocean? Are their basins cold or warm?

What river basins are about halfway between the equator and the poles?

Which part of the earth is in the hot belt? What river basins are in this belt?

The hot belt has no winter. Here some parts of the year are cooler than others, and some months are rainy while others are dry.

What river basins are in the warm belts?

The warm belts are a little cooler than the hot belt. They have long summers and short winters. Snow is seldom seen in the warm belts, except on mountains, but there are many frosty nights in winter.

What river basins are in the cool belts?

The cool belts have cold winters and hot summers. The air of spring and autumn is cool. The land is white with snow during a large part of winter and early spring.

There is but little land in the southern cool belt.

The cold belt of the north has very long winters and short summers. Along the Arctic coast in this belt the soil is deeply frozen the year round. The hot sun of summer thaws it only a few inches in depth.

Even in summer a wide field of ice and snow spreads round each pole.

---

[1] On page 125 there is a small map of the *zones of light.*

106. The Trade Winds.

In nearly all parts of the hot belt, and for a short distance beyond it, brisk winds blow in a westerly direction. These are called *trade winds*.

The trade winds blow over about one half the surface of the earth. As they sweep over the sea they gather up a vast amount of moisture and give it to the river basins in their path.

What great river basins are in the hot belt?

Junk on the Pacific.

In some places over the land, the trade winds turn from their westerly course. Over the sea these winds often blow for weeks without changing either their speed or their direction.

The winds that bear moisture to the river basins of the warm and cool belts of the north blow mainly from the southwest and west.

On the cover of this book there is a picture of the fleet of Columbus. The trade winds filled the sails of this fleet, during the famous voyage to America, in 1492.

107. The Gulf Stream.

There are many streams of salt water in the sea. These are called *ocean currents*. Some are warm and others are cold.

Wide ocean currents flow westward under the trade winds. A branch of one of these currents winds among and around the West Indies, and then flows northeast across the Atlantic ocean. After passing Cuba this is called the *Gulf stream*.

Between Cuba and Florida this stream is about forty miles wide and half a mile deep. It flows about five miles an hour. The water is dark blue and very warm.

As the Gulf stream crosses the Atlantic, it widens and flows more slowly. West of Europe this warm stream divides. One part flows along the northwest shore of Europe while the other part turns towards Africa.

The Gulf stream warms the winds that sweep over it, and these winds bear much warmth to western Europe. They give mild weather all the year to the British Isles. By and by we shall learn about other great currents in the sea.

The strange vessel in the picture is called a *junk*. It is made of bamboo, — a large grass-like plant that grows in southeast Asia.

Several years ago a junk was wrecked off the coast of China. Its masts were broken off and its sails were blown away.

For weeks and weeks the hull drifted in a great ocean current. At length it was found upon the rocky shore of Alaska, thousands of miles from the place where it lost its masts.

The junk drifted in the *Japan current*. In what direction does this current flow?

PLANTS.

108. Where Plants Grow.

Can you name a plant that grows in a swamp? Can you name one that grows in a sandy place?

What flowers have you seen growing in the woods?

Of what use is the tuft on the thistle seed?

Do you know of any seeds so light that they are blown about?

Try to find a seed that will float on water. How might that seed be carried from one place to another?

Can you name any birds that feed on seeds? On fruits?

Can you name an enemy of each of these plants: potato, tomato, corn, apple?

109. Soil, Water and Heat.

Every plant grows best where it has the kind of soil, and the amount of water and heat that it needs.

Where do pussy willows and cat-tails grow? Have you ever seen them on high rocky places? They like swamps and the banks of ponds and streams.

Where does the water lily grow? Where are its roots? Do you think that you could make a water lily grow in your garden?

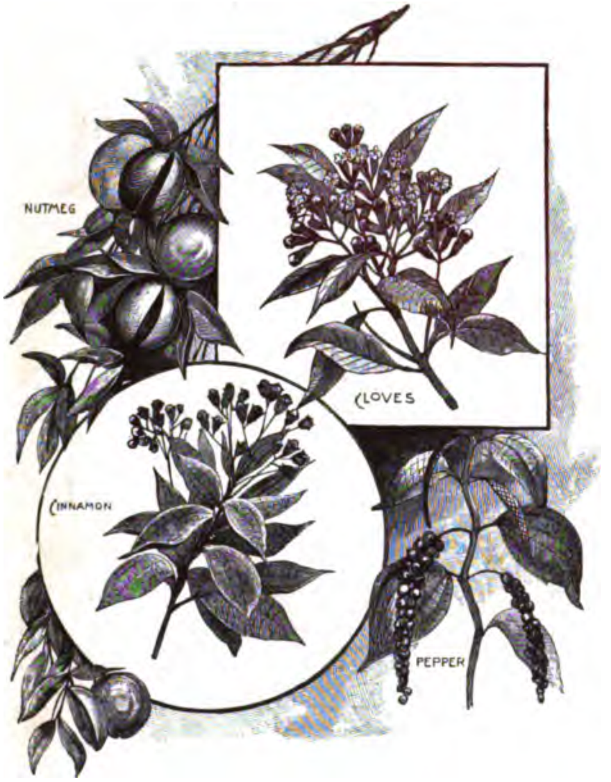
Have you ever seen the pretty white heads of clover waving in dry pastures? A little red clover also grows there, but much more of it is found in moist meadows.

Pines thrive on dry and rocky hillsides. Wheat grows best in the rich soil of prairies. Oranges ripen in sunny lands where the warm season lasts nearly all the year.

All over the earth, plants search out the soil, heat and moisture that best suit their needs.

110. Plants of the Hot Belt.

Which of the little people whom we have visited live near the equator?



Spices.

What do the people of Java eat? What plants grow near the home of our Malay friends?

Where is Tibbu's home? What plants supply food to the people of the Kongo basin?

What have you learned about the selvas? What large lily grows in the shallow water of the Amazon river? Why is it so hard to travel in the selvas?

What do you know about the seasons of the *hot belt?*

The *hot belt* includes parts of the basins of the Amazon, Nile and Kongo rivers, the peninsulas of southern Asia, and the islands southeast of Asia.

This belt has a hot or a warm season all the year, with plenty of rain. The hot belt is very rich in plant life.

Among the chief food plants are the plantain, breadfruit, date and cocoanut.

The plantain is very much like the banana.

The banana often grows to the height of twenty feet, with leaves ten feet in length. Several clusters of fruit grow on each plant.

In hot lands the banana is widely used as food. On many islands of the Pacific it is the chief food of the natives.

Breadfruit grows on a tree that has large glossy leaves. The fruit is about as large as a melon. It is picked just before it is ripe, and is often cooked by baking. This useful fruit tastes like boiled potatoes and sweet milk.

The breadfruit is also cut into slices and dried in the sun. The slices are then baked, or they are ground to flour and made into bread.

The islands southeast of Asia are very rich in spices. Among these are pepper, cloves, nutmeg and cinnamon.

Cloves grow on trees. The buds are picked when they turn red. They are then dried and sent to market. Cloves have a hot, biting taste.

Cinnamon is the dried bark of a kind of small tree. The outer bark is taken off, and only the inner bark is dried for market. Do you like this fragrant spice?

Nutmegs are taken from a little fruit that grows on a large tree. The seed of this fruit is taken out and dried for several weeks. It is then cracked open and out comes a hard kernel.

This kernel is the nutmeg which is often grated into puddings and pies.

Banana Plant.

Pepper berries grow in long clusters on a climbing shrub or vine. The berries are dried in the sun.

111. Plants of the Warm Belts.

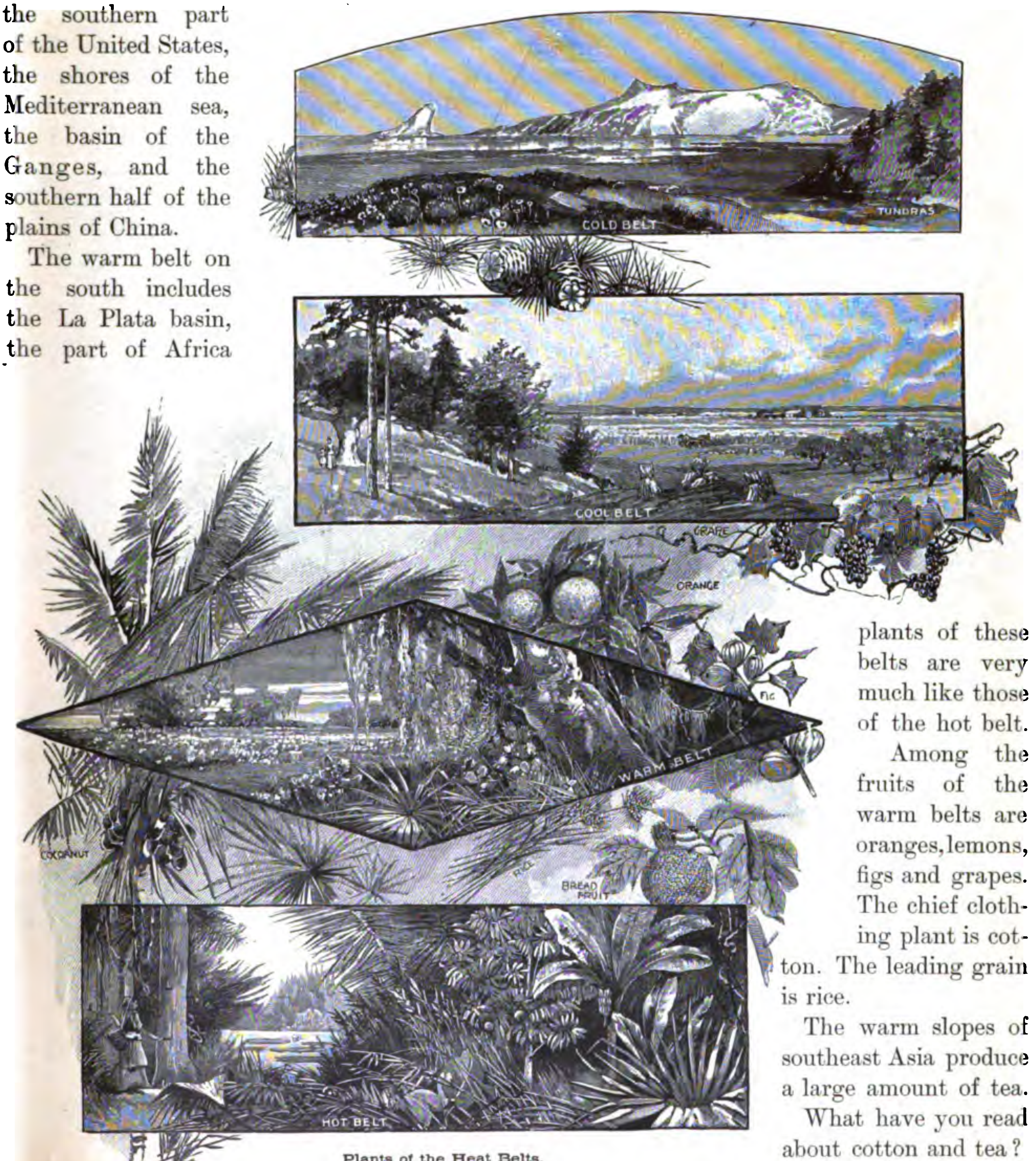
There is a *warm belt* on each side of the *hot belt*.

The warm belt on the north includes Mexico, the southern part of the United States, the shores of the Mediterranean sea, the basin of the Ganges, and the southern half of the plains of China.

The warm belt on the south includes the La Plata basin, the part of Africa that lies south of the Kongo basin and nearly all of Australia.

The seasons of the warm belts are long, hot summers and short, cool winters. The plants of these belts are very much like those of the hot belt. Among the fruits of the warm belts are oranges, lemons, figs and grapes. The chief clothing plant is cotton. The leading grain is rice.

The warm slopes of southeast Asia produce a large amount of tea. What have you read about cotton and tea?



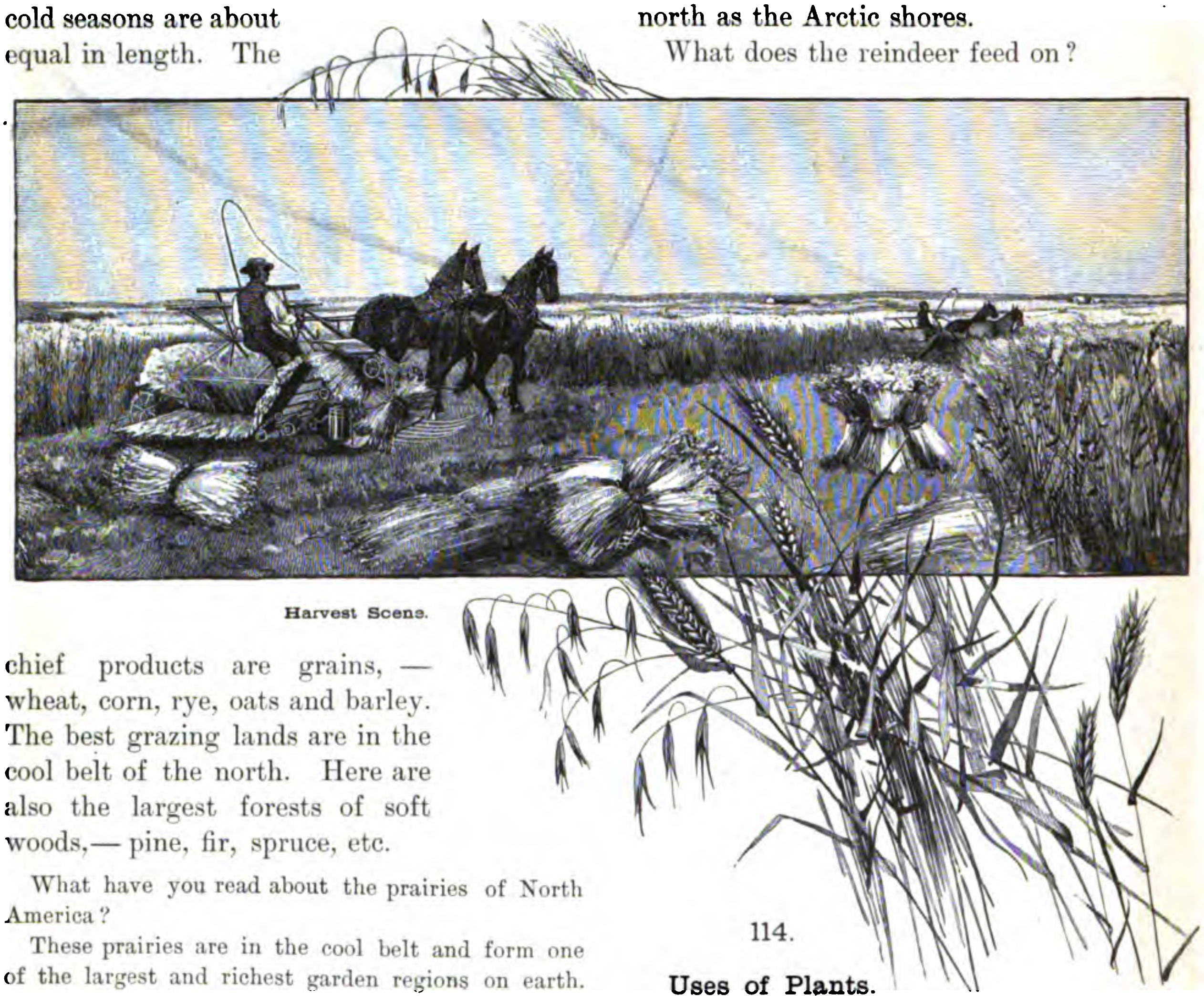
Plants of the Heat Belts.

112. Plants of the Cool Belts.

The *cool belt* on the north is a wide path across the middle of North America, Europe and Asia.

There is but little land in the cool belt south of the equator.

In the cool belt of the north the hot and cold seasons are about equal in length. The chief products are grains, — wheat, corn, rye, oats and barley. The best grazing lands are in the cool belt of the north. Here are also the largest forests of soft woods,— pine, fir, spruce, etc.



Harvest Scene.

What have you read about the prairies of North America?

These prairies are in the cool belt and form one of the largest and richest garden regions on earth. Over large areas the soil is more than fifty feet in depth. The rainfall is plentiful, and the land is so nearly level that most of the rain that falls here sinks into the soil.

The picture on this page is a harvest scene on the prairies. The large machines drawn by horses reap and bind the wheat.

What kinds of grain are made into flour?

113. Plants of the Cold Belt.

A cold belt reaches from the bleak slopes near the Arctic shore to the north pole.

Very little is known about the islands in the icy sea round the south pole.

The cold belts have very short summers. Stunted trees and shrubs grow nearly as far north as the Arctic shores.

What does the reindeer feed on?

114.

Uses of Plants.

Name six plants that supply food.

What kinds of cloth are made from plants?

What kinds of wood are used in houses?

Do you know of any plants that are used for medicine?

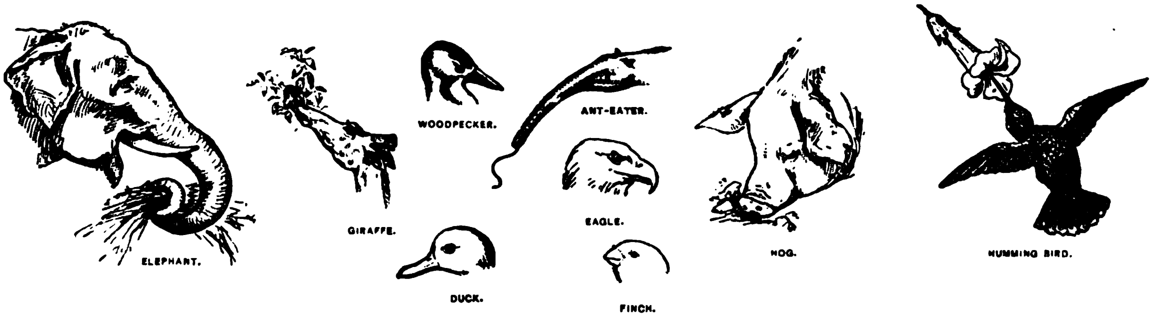
What articles are made from bark? From sap? From buds? Leaves? Roots? Blossoms? Wood?

ANIMALS.

115. Animals, — Their Teeth, Claws, etc.

Name two animals that feed on grass? What kinds of feet or toes have they?

Draw an eagle's foot, and a duck's foot. Can you tell the uses of each?



How do the teeth of a cow differ from those of a cat? Why does a cow not need sharp teeth, like those of a cat?

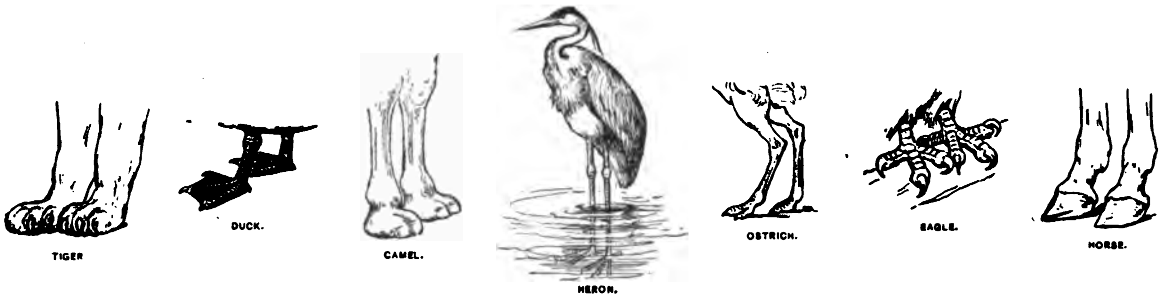
What kind of covering has a sheep? A frog? A trout? A robin? Where does each live?

Which do you think are warmer, feathers or furs?

116. Animals and their Homes.

Every creature is suited to its proper home.

There are many kinds of bills, legs, feet, tongues, noses and teeth, but each kind has its special use. It helps the animal to get food or to protect itself in the place where it lives.

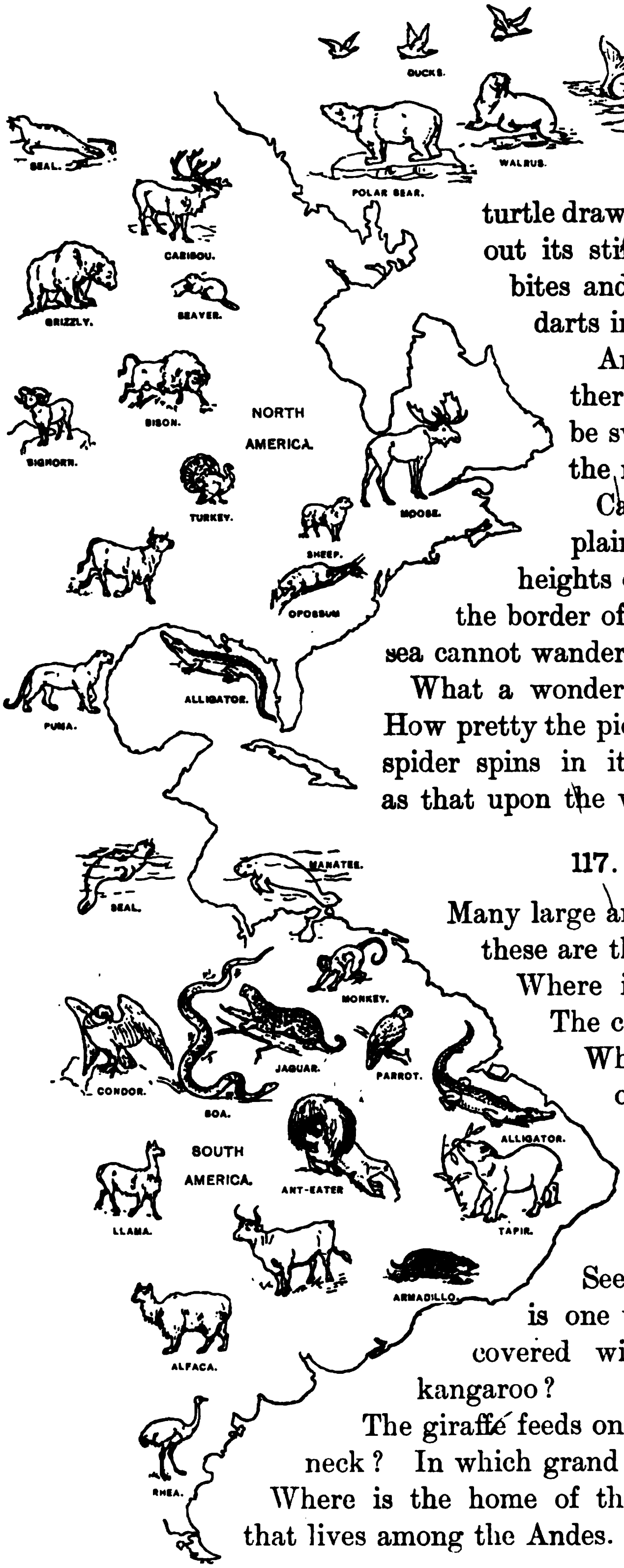


The eagle has sharp claws and a beak to hold and to tear the flesh on which it feeds. The heavy horse with wide hoofs can graze on soft land, and its feet do not cling to the grass roots.

The humming bird has a long slender bill which it thrusts deep into sweet blossoms for nectar and insects. The heron has long legs for wading, and a neck of about the same length to reach down for food.

Animals have many kinds of coverings. There are turtles with strong shells, fish with thin scales, birds with light feathers, frogs with smooth skin, sheep with curly wool, and squirrels with soft fur. Some animals are suited to live in water, and others on land or in the air.

All around us there is a struggle for food. The sharp-eyed robin makes a dainty meal of earthworms, and soon the cheery songster is in the claws of a cat. The owl flies about in the evening, looking for field-mice.



Every creature has some means of defense or of escape. The fly, with its many eyes and its wings, often saves itself by flight. The turtle draws itself within its hard shell. The bee thrusts out its sting. The horse kicks, the cow tosses, the dog bites and the squirrel leaps from branch to branch or darts into a hole.

Animals often roam about in search of food, but there are places that they cannot cross. They may be swift and strong, but they cannot live beyond the regions that produce their food.

Cattle roam over meadows and high, grassy plains, but they cannot pass over broad, rocky heights or sandy tracts. The wild horse must stop at the border of the grassland. Animals whose food is in the sea cannot wander far from the shore.

What a wonderful storybook Nature writes in each season. How pretty the pictures are! Can you read the story that the spider spins in its web? Can you draw a picture as pretty as that upon the wing of a butterfly?

117. Animals of the Heat Belts.

Many large and fierce animals live in the hot belt. Among these are the elephant, the lion and the gorilla.

Where is the home of the camel? Of the tapir? The crocodile? The boa? The rhinoceros?

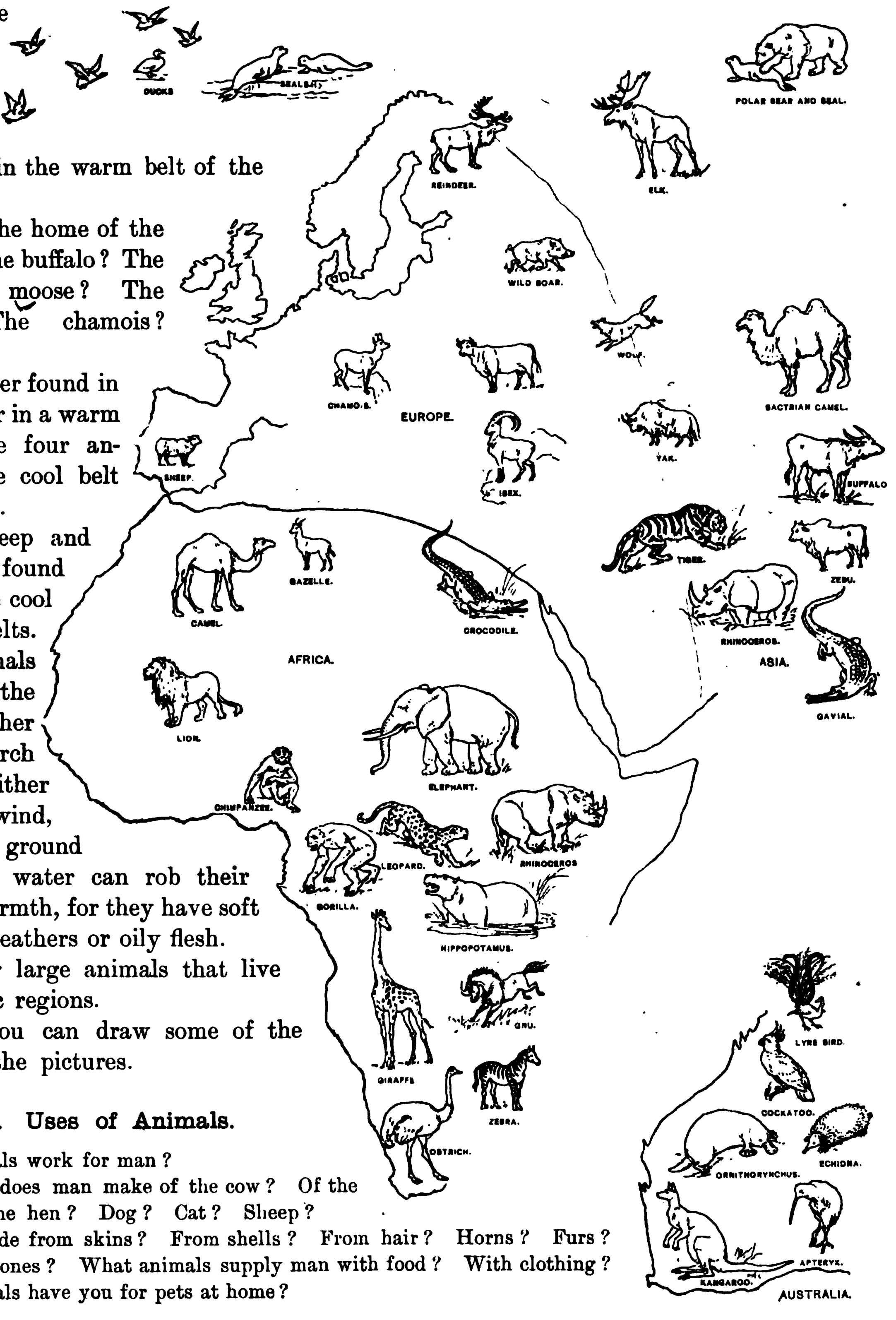
Why cannot the animals of Africa reach Australia or South America?

Only a few animals can cross oceans, deserts or lofty highlands. For this reason the same kinds of animals do not roam over all parts of a heat belt.

See what queer animals live in Australia! There is one with a bill like that of a duck. Another is covered with sharp spines. Have you ever seen a kangaroo?

The giraffe feeds on leaves and branches. Of what use is its long neck? In which grand division is the giraffe found?

Where is the home of the llama and the alpaca? Name a large bird that lives among the Andes.



Name three animals that live in the warm belt of the south. Name three in the warm belt of the north.

Where is the home of the bison? Of the buffalo? The yak? The moose? The grizzly? The chamois? The elk?

Is the beaver found in a cold land or in a warm one? Name four animals of the cool belt of the north.

Cattle, sheep and horses are found chiefly in the cool and warm belts.

Some animals brave even the Arctic weather in their search for food. Neither the chilly wind, the frozen ground nor the icy water can rob their bodies of warmth, for they have soft fur, downy feathers or oily flesh.

Name four large animals that live in the Arctic regions.

Perhaps you can draw some of the animals in the pictures.

118. Uses of Animals.

What animals work for man?

What uses does man make of the cow? Of the horse? Of the hen? Dog? Cat? Sheep?

What is made from skins? From shells? From hair? Horns? Furs? Feathers? Bones? What animals supply man with food? With clothing?

What animals have you for pets at home?

Coast near San Francisco.

Coast of Maine.

THE UNITED STATES.

119. Surface of the United States.

The United States includes the middle part of North America and all Alaska.[1]

The north shore of the gulf of Mexico is at one third of the distance from the equator to the north pole. The line which is just halfway between the equator and this pole passes through the Great Lakes. The southern part of the United States is in the warm belt. The northern part is mainly in the cool belt.

Review. — What bodies of water border on the United States?

Between what high mountains does the Great Basin lie?

Where does the Colorado river rise? For what is it noted? Into what gulf does it flow?

Through what high range does the Columbia river flow? Into what sea does the Yukon river flow?

Where are the Great Lakes? Name them. What river flows from Lake Ontario?

What bounds the basin of the Mississippi on the west? On the east? On the north?

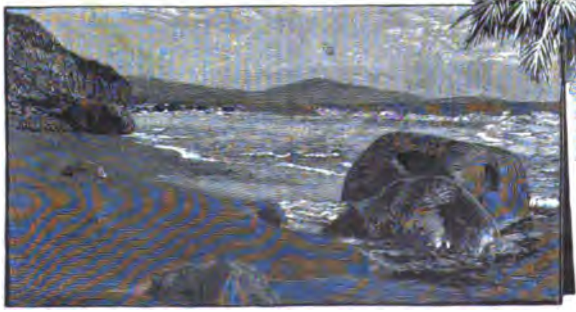
Name a large river that flows into the Mississippi from the west? Where does the Missouri river rise? Into what does the Ohio river flow?

Where are the prairies? The western plains? The southern plains? Tell what you have learned about the surface of the United States.

Where is the city of New York?

Southward from New York, along the Atlantic ocean and gulf of Mexico, the coast is mainly low and sandy. The best harbors are near the mouths of rivers or on large bays.

East and northeast of New York the coast is in many places rocky and broken, and there are many fine harbors. There are but few good harbors on the Pacific coast of the United States.



Coast of Southern California.

Coast of Florida.

---

[1] See map on page 105.

120. People.

Who was Columbus? When did he live? What people lived in America at that time?

Nearly all the early settlers in the land now called the *United States* made their homes along the Atlantic coast. Let us see why: —

a. The early settlers came from Europe and landed on the east coast.

b. There were no roads nor long rivers leading inland from this coast to the prairies.

c. The Appalachian highland stood between the Atlantic coast and the prairies.

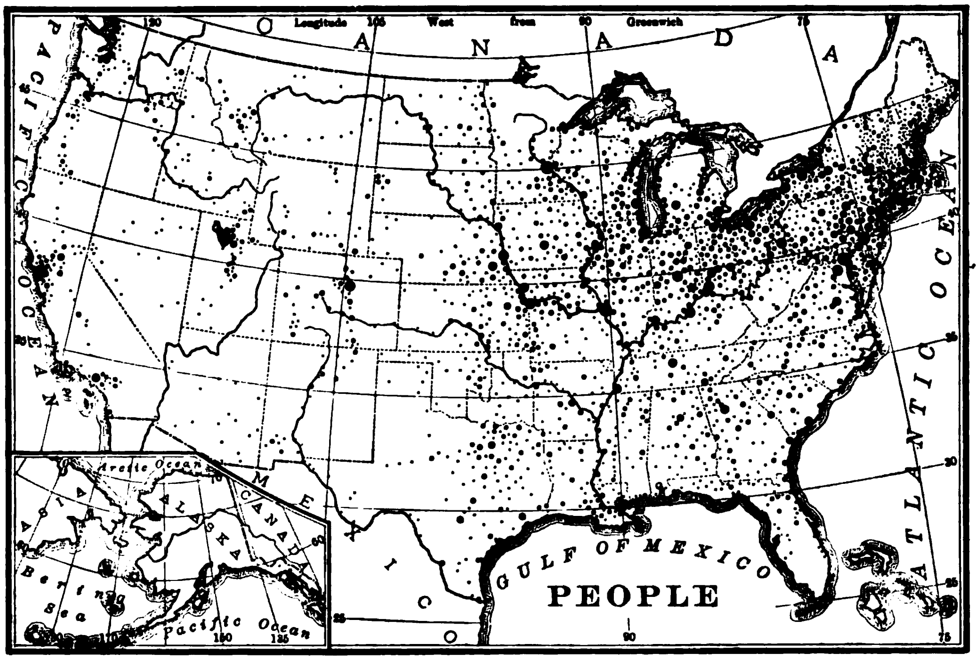
d. Savage tribes held the lands that were a little back from the coast.

e. The settlers wished to trade with the ships from Europe.

After a time, people found that there were vast fertile prairies west of the mountains, and that they could reach them by sailing down the Ohio river or up the Great Lakes. Many also went up the Mississippi river from its mouth.

Towns soon grew up along the lakes and rivers. Many of them were trading stations where the Indians sold furs for beads, knives, powder and other articles.

About fifty years ago gold was found near the Pacific coast, and many people went there in search of fortunes. Some crossed the vast plains and basin region, in wagons or on horses. Others sailed round Cape Horn. Still others went in vessels to the isthmus of Panama, crossed that neck of land, and then sailed up the coast. Thus the west shore of our country was settled.



From time to time new deposits of silver and gold were found in many parts of the Rocky Mountain highland. Mining camps soon grew to be towns or cities, and thus even the great highland was settled.

The dots on the above map show the location of cities and towns. Where are the dots largest and thickest?[1]

---

[1] The star on the map shows the center of population, according to latest census.

Which has the greater number of dots, the Mississippi basin or the Rocky Mountain highland? What part of the Mississippi basin is most thickly settled?

Liberty Bell.

Where is the *Pacific slope?* Where is the *Atlantic slope?* Which of these slopes is the more thickly settled? Can you tell why?

About one tenth of the people of the United States are Negroes.

A long time ago, many black people from Africa were sold as slaves in the United States. Their labor proved most helpful in the cotton fields of the South.

At length all the slaves were set free, and most of them made their homes on the southern plains where they had worked.

The number of Indians in the United States is very small as compared with the number of Negroes. The red-brown people of the United States have in most cases been placed on lands set apart for them in various parts of the country.

121. July 4, 1776.

Each band of early settlers formed a *colony.* The people of the colonies were called *colonists.* Most of those who made their homes along the Atlantic coast came from England.

During the wars which the colonists had with the Indians, many of the small colonies united to form larger ones. Can you tell why they did so? After a time there were thirteen large colonies.

The king of England made the colonists pay unjust taxes, and at length wise men in the colonies were chosen to decide what should be done.

On *July 4, 1776,* these brave men voted to declare their land free from English rule, and to form a new nation.

The "liberty bell" was the first to ring out the glad news of freedom. This old bell still hangs in Independence Hall, in the city of Philadelphia.

Each colony was called a *state,* and all the states together formed the *United States of America.*

At that time the United States held the land as far west only as the Mississippi river. The country now reaches from ocean to ocean, and many new states have been formed.

The city of Washington is the capital of the country.

All the states send men to Washington, and these make laws for the whole nation. Each state is also somewhat like a nation, and can make laws for itself, but such laws must not conflict with those made in Washington.

Minute Man.

Each state has a capital. Cities and towns that are capitals are marked by stars (✱) on the maps.

Find out all you can about the "minute men."

122. Map Studies of the States.[1]

In what state do you live? In what part of the United States is it? (See map on next page.)

Name the states that border on the Atlantic ocean.

What states are separated by the Delaware river? By Delaware bay? By Chesapeake bay? By the Potomac river? By the Savannah river?

Name the states along the gulf of Mexico. In which state is the delta of the Mississippi? What two gulf states are separated by the Mississippi river? What river flows between Texas and Mexico?

Which states border on Lake Erie? On Lake Michigan? On Lake Superior?

Name the states along the north bank of the Ohio. On what lake does each of these states border? What states are on the south bank of the Ohio?

In what state does the Mississippi river rise? Name in order the states along the *left* bank of this river. Name those that lie along the *right* bank.

What states are crossed by the Missouri river? Between which does it flow? Across what states does the Arkansas river flow?[2]

What states are crossed by the Rocky mountains? What states border on the Colorado river? Which are separated by the Columbia river? In what state is the Great Salt lake?

What states border on Mexico? On the Pacific ocean? On Canada?

123. Leading Cities.

Find on the map the following cities. Tell in which state each city is located; also, where it is,— whether near a large river, lake, bay, gulf, mountain range or near the sea.

New York	nū yôrk′
Chicago	sh*e*-ka̤′gō
Philadelphia	fĭl′*a*-dĕl′fĭ-*a*
Brooklyn	bro͝ok′lĭn
St. Louis	sānt lo͞o′ĭs
Boston	bôs′t*o*n
Baltimore	ba̤l′tĭ-m*o*r
San Francisco	frăn-sĭs′kō
Cincinnati	sĭn′sĭn-nä′tĭ
Cleveland	klēv′l*a*nd
Buffalo	bŭf′f*a*-lō
New Orleans	ôr′l*e*-*a*nz
Pittsburg	pĭts′bûrg
Washington	wŏsh′ĭng-t*o*n
Detroit	d*e*-troit′
Minneapolis	mĭn′*e*-ăp′ŏ-lĭs
Louisville	lo͞o′-ĭs-vĭl
Omaha	ō′m*a*-ha̤′
Kansas City	kăn′s*a*s
Denver	dĕn′v*e*r
Richmond	rĭch′-m*o*nd
Nashville	năsh′vĭl
Atlanta	ăt-lăn′t*a*
Portland (Ore.)	pōrt′l*a*nd

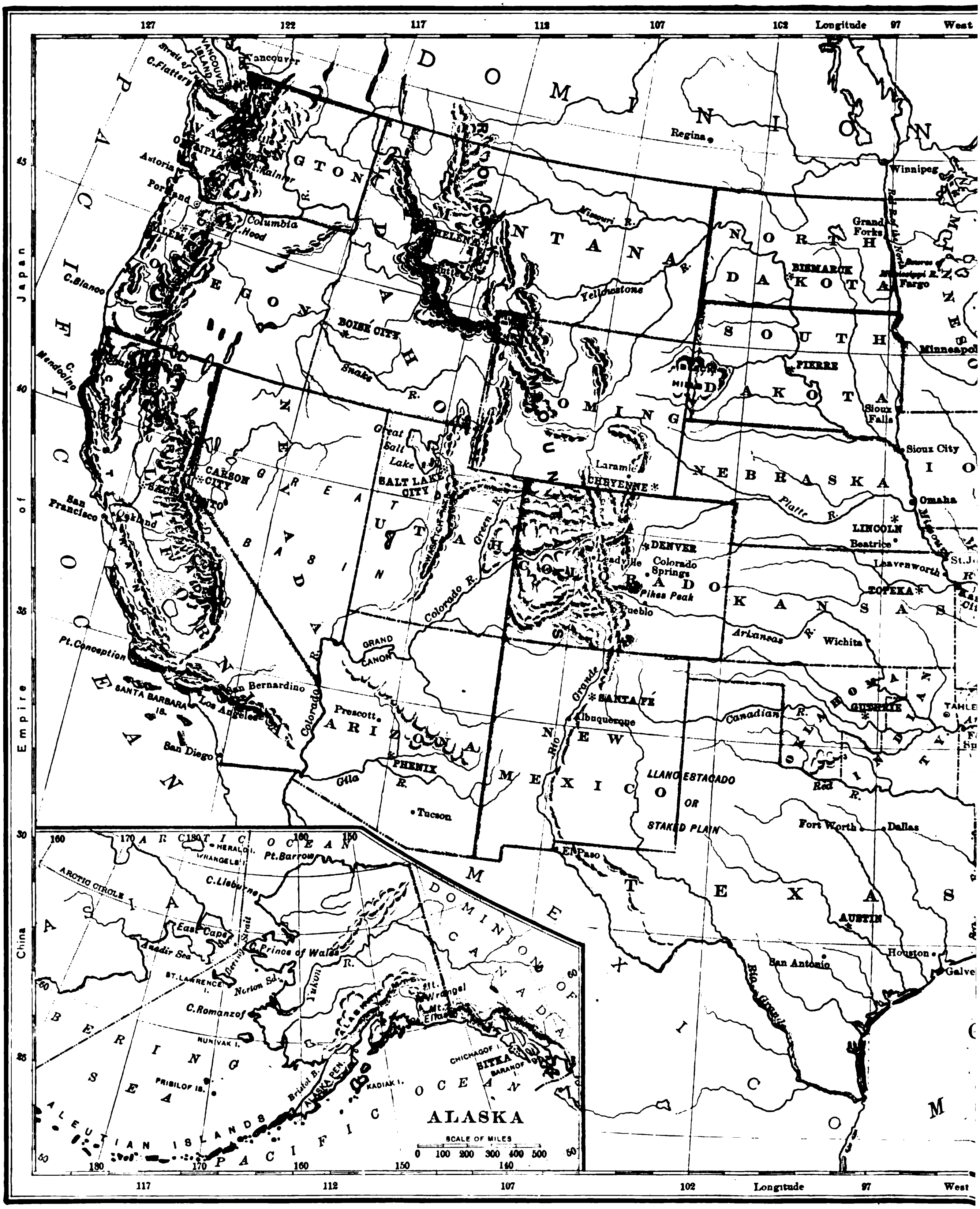
---

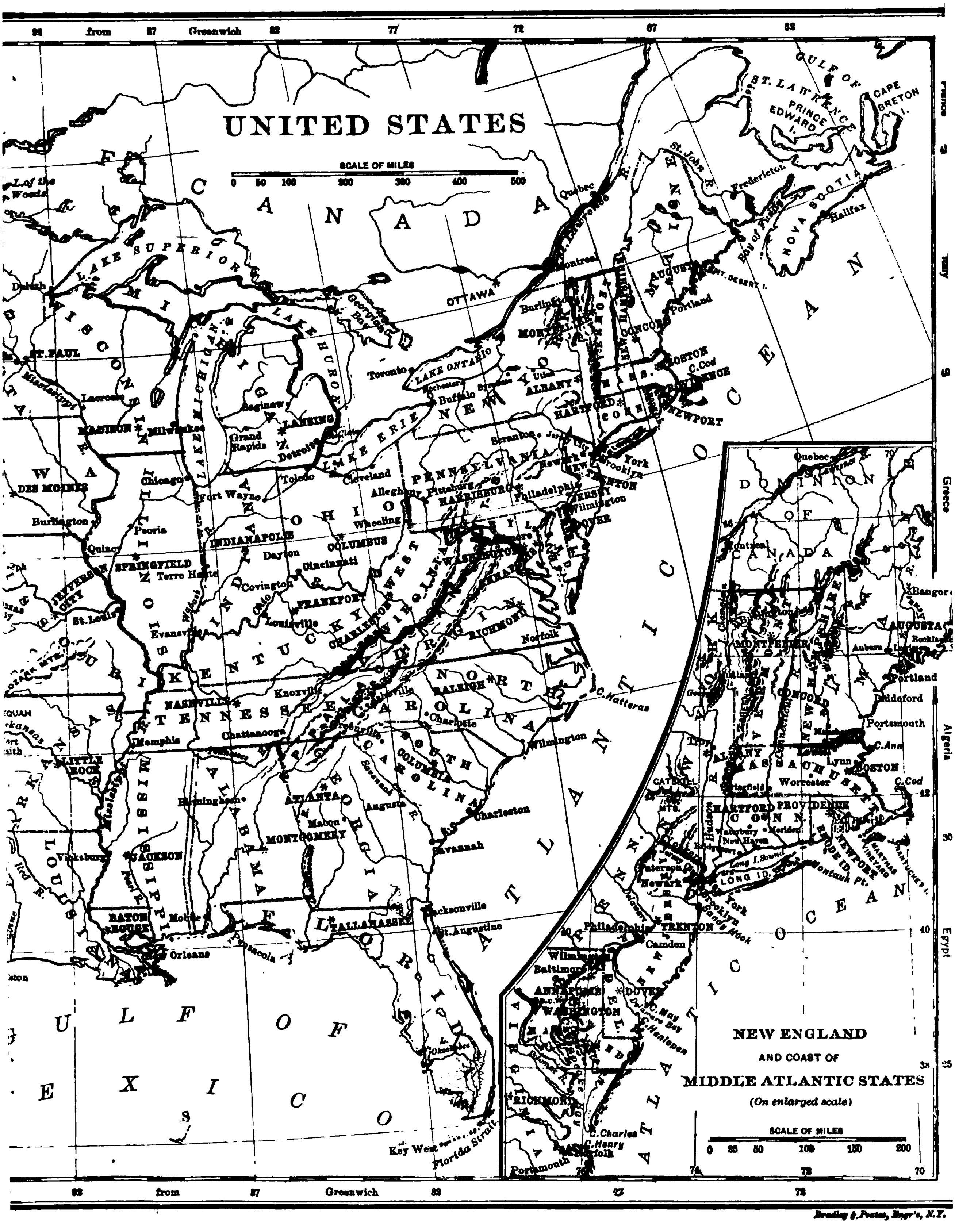
[1] How to pronounce the names of states:

Alabama	ăl′*a*-bä′m*a*	Iowa	ī′ŏ-w*a*	New Jersey	jẽr′zĭ
Alaska	ȧ-lăs′k*a*	Kansas	kăn′s*a*s	New Mexico	mĕx′ĭ-kō
Arizona	ăr-ĭ-zō′n*a*	Kentucky	kĕn-tŭk′ĭ	Ohio	ō-hī′ō
Arkansas	är′k*a*n-sa̤′	Louisiana	lo͞o′ē-zē-ä′n*a*	Oklahoma	ŏk-lä-hō′m*a*
California	kăl′ĭ-fôr′nĭ-*a*	Maine	mān	Oregon	ŏr′*e*-gŏn
Carolina	kăr-ŏ-lī′n*a*	Maryland	mĕr′ĭ-l*a*nd	Pennsylvania	pĕn′sĭl-vā′nĭ-*a*
Colorado	kŏl′*o*-rä′dō	Massachusetts	măs′*a*-chū′-s*e*ts	Rhode Island	rōd ī′l*a*nd
Connecticut	kŏn-nĕt′ĭ-kŭt	Michigan	mĭsh′ĭ-g*a*n	Tennessee	tĕn′n*e*s-sē′
Dakota	d*a*-kō′t*a*	Minnesota	mĭn′*e*-sō′t*a*	Texas	tĕx′*a*s
Delaware	dĕl′*a*-wâr	Mississippi	mĭs′ĭs-ĭp′ĭ	Utah	ū′tä
Florida	flŏr′ĭ-d*a*	Missouri	mĭs-o͞o′rĭ	Vermont	v*e*r-mŏnt′
Georgia	jôr′jĭ-*a*	Montana	mŏn-tä′n*a*	Virginia	v*e*r-jĭn′ĭ-*a*
Idaho	ī′d*a*-hō	Nebraska	n*e*-brăs′k*a*	Washington	wŏsh′ĭng-t*o*n
Illinois	ĭl-lĭ-noi′	Nevada	n*e*-vä′d*a*	Wisconsin	wĭs-kŏn′sĭn
Indiana	ĭn′dĭ-ăn′*a*	New Hampshire	hămp′sh*i*r	Wyoming	wī-ō′mĭng

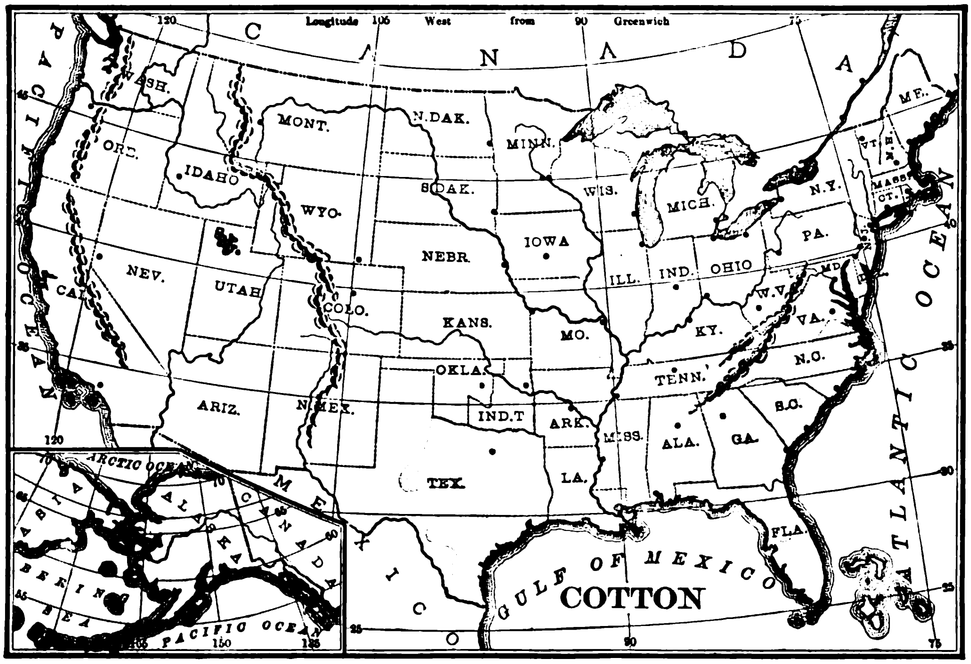
Key: āle, câre, ăm, ärm, fin*a*l, a̤ll; ēve, ėvent, ĕnd, hẽr, rec*e*nt; īce, ĭll; ōld, ȯbey, fôr, ŏn; ūse, ŭp, fûr; fo͞od, fo͝ot; g *as in* go.

[2] To Teacher: It does not seem desirable at this time to make a distinction between states and territories.


127
122
117
112
107
102
Longitude
97
West
45
40
35
30
25
Japan
of
Empire
China
PACIFIC OCEAN
DOMINION
Vancouver
Vancouver Island
Strait of Juan de Fuca
C. Flattery
Regina
Winnipeg
WASHINGTON
Olympia
Mt. Rainier
Astoria
Portland
Columbia
Mt. Hood
Salem
OREGON
C. Blanco
C. Mendocino
IDAHO
Boise City
Snake R.
MONTANA
Helena
Butte City
Missouri R.
Yellowstone
NORTH DAKOTA
Bismarck
Grand Forks
Fargo
Red R. of the North
Source of Mississippi R.
MINNESOTA
Minneapolis
SOUTH DAKOTA
Pierre
Black Hills
Sioux Falls
Sioux City
WYOMING
Laramie
Cheyenne
NEBRASKA
Platte R.
Lincoln
Omaha
Beatrice
IOWA
NEVADA
Carson City
GREAT BASIN
Great Salt Lake
Salt Lake City
UTAH
Green R.
Colorado R.
CALIFORNIA
Sacramento
San Francisco
Oakland
Pt. Conception
Santa Barbara Is.
Los Angeles
San Bernardino
San Diego
COLORADO
Denver
Leadville
Colorado Springs
Pikes Peak
Pueblo
KANSAS
Topeka
Leavenworth
Arkansas R.
Wichita
Grand Canon
Prescott
ARIZONA
Phenix
Gila R.
Tucson
Colorado R.
NEW MEXICO
Santa Fé
Albuquerque
Rio Grande
Llano Estacado or Staked Plain
El Paso
Canadian R.
OKLAHOMA
Guthrie
INDIAN TERRITORY
Tahlequah
Red R.
Fort Worth
Dallas
TEXAS
Austin
San Antonio
Houston
Galveston
Rio Grande
MEXICO
ARCTIC OCEAN
Herald I.
Wrangel I.
Pt. Barrow
Arctic Circle
C. Lisburne
ASIA
East Cape
Anadir Sea
Bering Strait
C. Prince of Wales
Yukon R.
St. Lawrence I.
Norton Sd.
Mt. Wrangel
Mt. St. Elias
C. Romanzof
Nunivak I.
BERING SEA
Pribilof Is.
Bristol B.
Alaska Pen.
Kadiak I.
Chichagof I.
Sitka
Baranof I.
DOMINION OF CANADA
PACIFIC OCEAN
ALEUTIAN ISLANDS
ALASKA
SCALE OF MILES
0 100 200 300 400 500
160
170
180
150
140
60
55
50
117
112
107
102
Longitude
97
West



Bradley & Poates, Engr's, N.Y.



124. Cotton.

In what part of the United States is cotton raised? (See dark tint on map.)

The cotton region, or "belt," reaches from the gulf of Mexico about halfway to the Great Lakes. It has a long hot summer and a short cool winter. This region is in the *warm belt.*

The cotton fields reach the sea on the east and south, and the great plains on the west. Cold seasons prevent this plant from growing farther north.

The cotton region has plenty of rain all the year. It is brought by warm winds from over the gulf of Mexico and from over the sea on the east.

New Orleans is the leading city in the cotton trade.

About one half the people on earth wear clothing made wholly from the fiber that grows around cotton seeds. Nearly all the rest of the human race, except the lowest savages, use it in some portion of their dress. Part of the fiber is also made into thread and rope.

Machines, called *cotton gins,* are used to separate the fiber from the seed. The gin has little saw teeth that draw the fiber through slits too narrow to admit the seed.

The best cotton grows on low islands along the Atlantic coast. It is known as *Sea Island cotton,* and its fiber is long, fine and strong.

The states on the northern half of the Atlantic slope make millions of yards of cotton cloth every year. Cotton mills are also running in some cities of the South.

What states are in the cotton belt?

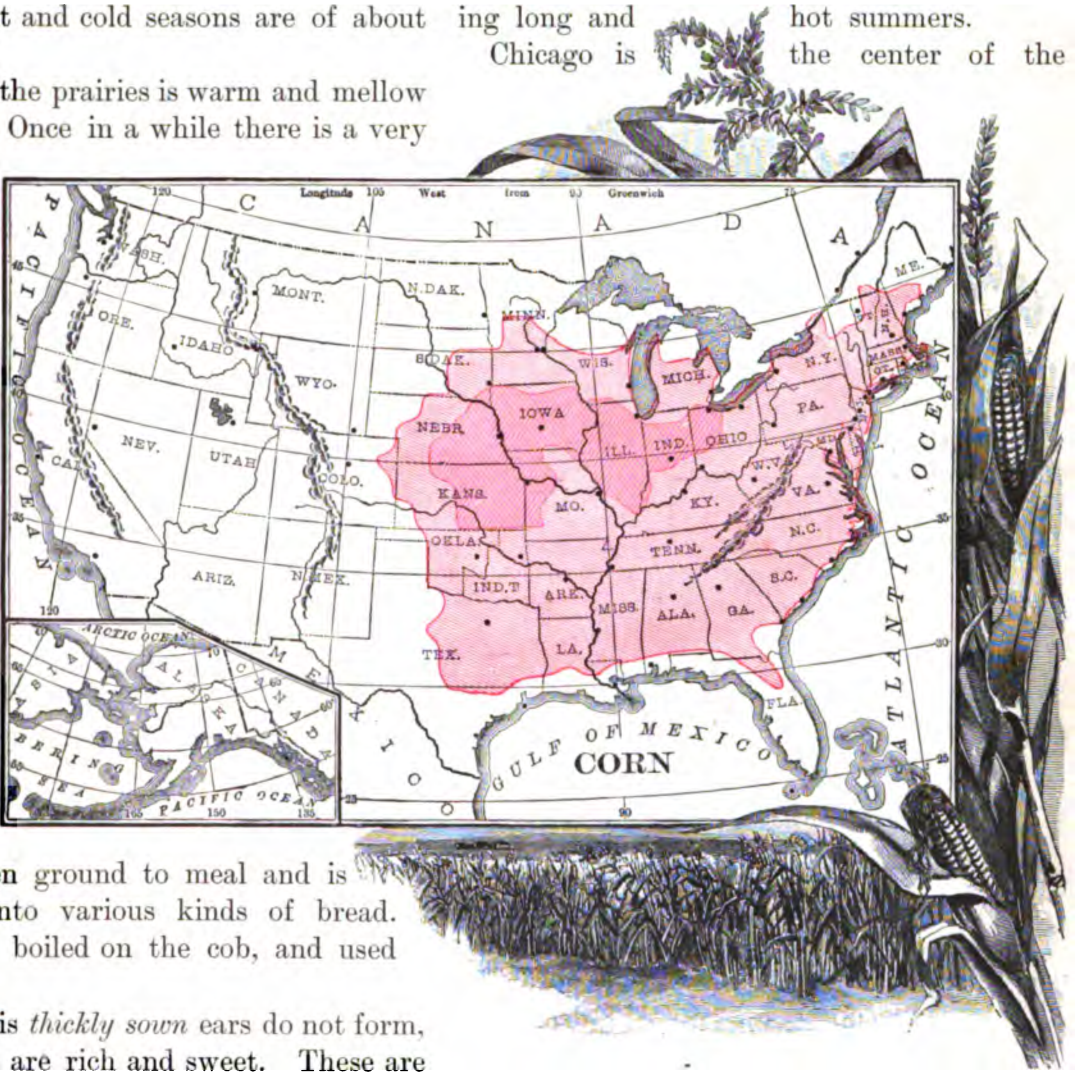
Cotton Field.

125. Maize or Indian Corn.

The rich prairies between the cotton region and the Great Lakes are in the *cool belt*. There the hot and cold seasons are of about equal length.

The soil of the prairies is warm and mellow in summer. Once in a while there is a very dry season, but as a rule there is plenty of rain.

The prairies are the richest grain region on earth. One of the leading grains is *maize*, or *Indian corn*. What states are in the region where most of the corn grows?



Corn is often ground to meal and is then made into various kinds of bread. Green corn is boiled on the cob, and used as food.

When corn is *thickly sown* ears do not form, but the stalks are rich and sweet. These are used as fodder or food for cattle.

Is there a girl or a boy in all our land who does not know what "pop corn" is? Do you like to watch the kernels burst with a *pop*, and puff into a snowy mass?

Frost kills growing corn, and cold nights hinder its growth. For these reasons, it does not grow so far north as some hardier grains do.

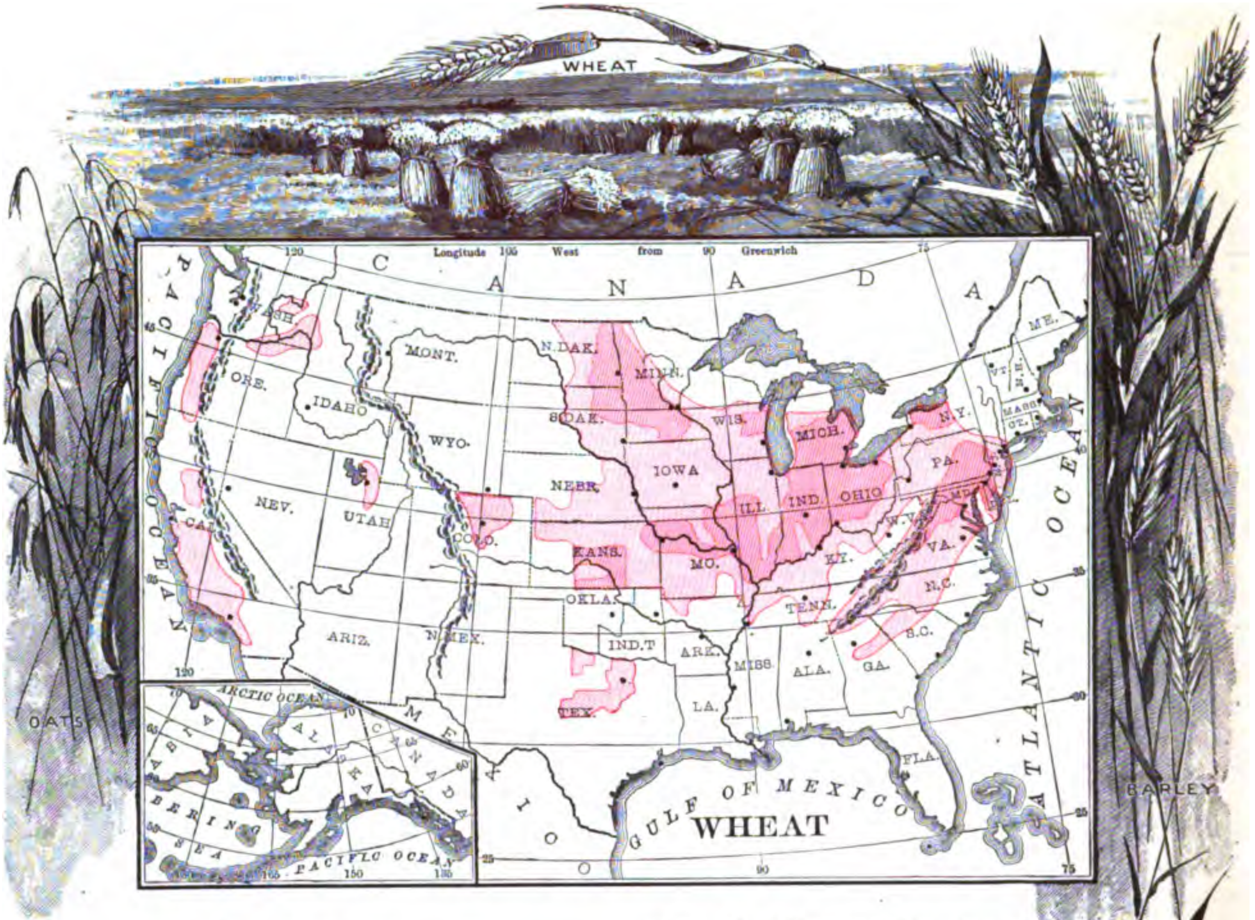
When the white men came to America, they found that the Indians had large fields of corn.[1] This useful grain was then taken to Europe, and later to nearly all lands having long and hot summers.

Chicago is the center of the corn trade in the United States. Where is Chicago?

Thousands of shiploads of grain are sent down the Great Lakes from this city. A large part of this grain passes through the Erie canal.

---

[1] It is claimed that maize was known to the people of southeast Asia long before the discovery of America, but this grain did not come into general use till long after it was found in the gardens of the Indians.



126. Wheat.

To the people of the United States, *wheat* is the most valuable of all grains.

Wheat is chiefly used in making flour. The little seed or fruit consists of a grain inside a husk. Only the inner part of the grain is ground into fine white flour.

Wheat thrives all over the rich prairies, and even far north across the border of the United States. The valleys of the Pacific slope yield large crops of this useful grain.

A large part of the wheat crop passes through Chicago. Every year this city ships many million bushels by steamer and by rail. The chief ports that handle wheat are New York, Baltimore and San Francisco. The city of Minneapolis leads the world in making flour. Where are these cities?

It is not known where wheat was first found, but it is not a native of America. This grain is chiefly raised in the *cool* and *warm belts*.

Wheat is often sown for hay, and the stalks make good straw. This grain stands cold nights and frost much better than corn does, and so is raised much farther north.

Find out at home what articles are made of wheat flour. Have you ever been in a mill in which corn or wheat is ground?

Name the states in which the most wheat is raised.

127. Forests.

What objects that you can now see are made of wood?

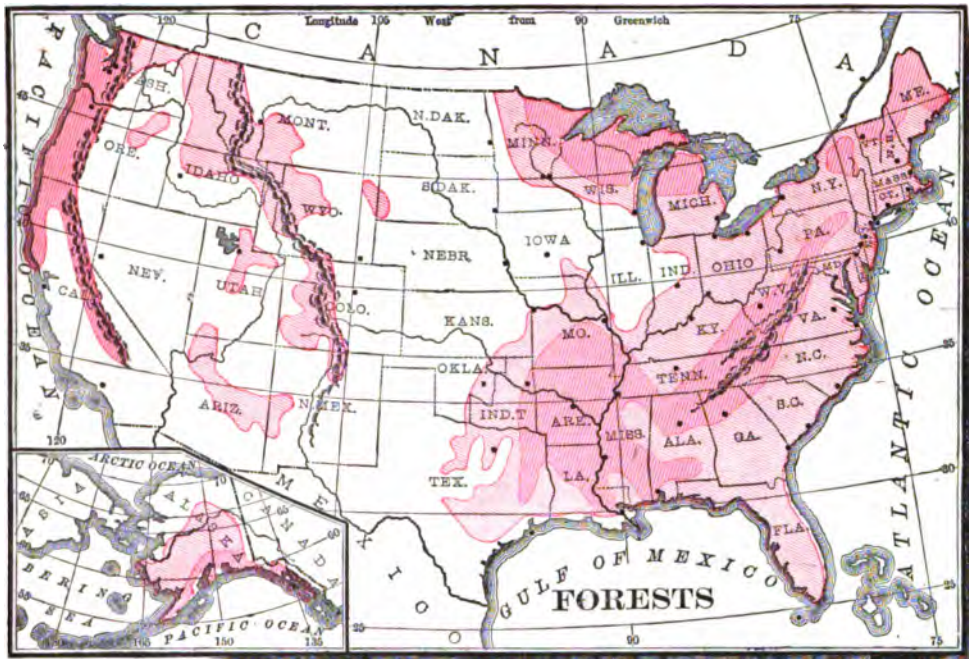
Can you name a tree that gives us food, and one that helps to warm us?

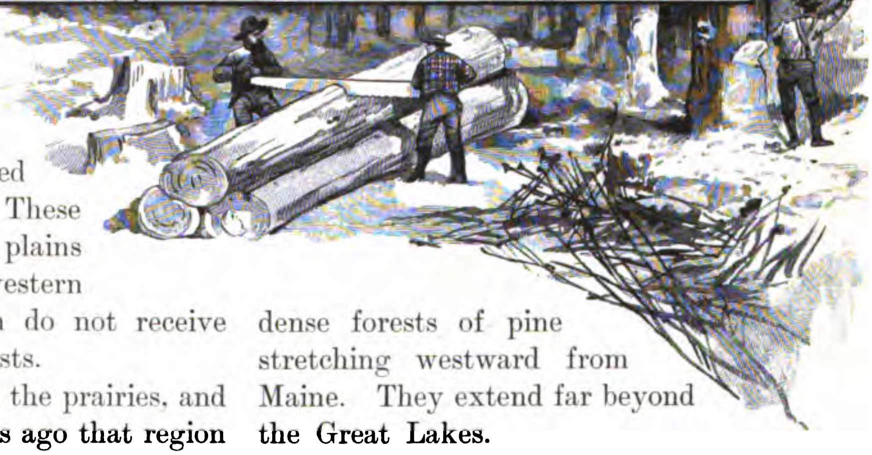
Have you ever taken any kind of medicine that comes from a tree?

Which is the prettiest wood that you have seen in furniture? Do you know of two kinds of trees that are used in building houses?

What parts of wagons are made of wood? Name some wooden weapons. Of what do Indians make canoes?

What kinds of trees grow near your school? Do you not think that trees are among the most useful of Nature's gifts?





Three parts of the United States have very few trees. These are the prairies, the western plains and the Great Basin. The western plains and the Great Basin do not receive enough rain to support forests.

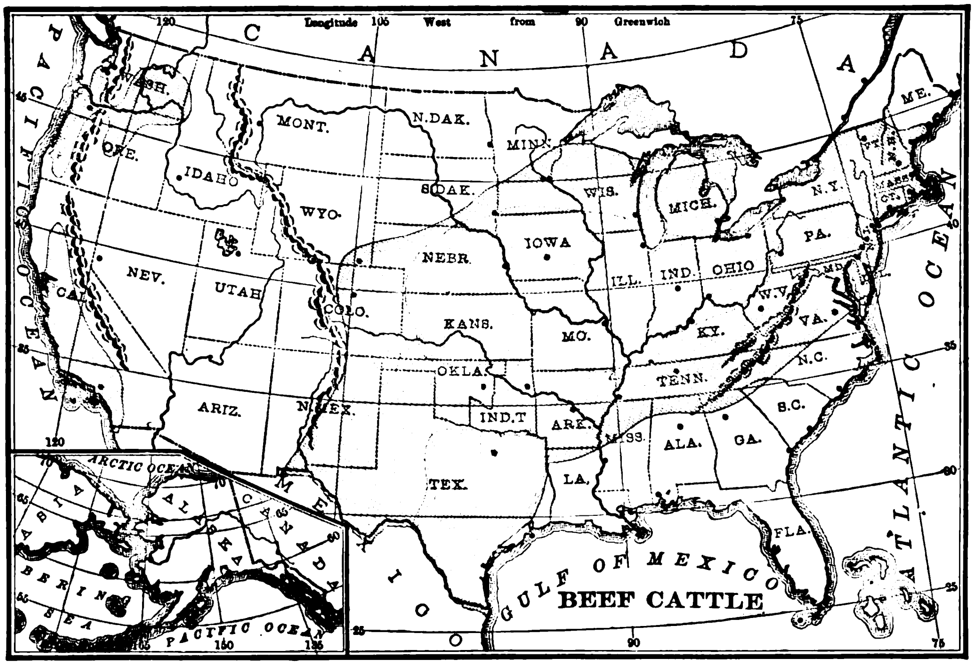
There is plenty of rain on the prairies, and it is thought that many years ago that region was forest-clad.

Before the white people settled on the prairies, the Indians often set fire to the grass so that it would spring up fresh and green for the herds of bisons. The fires killed the young trees, and when the large trees died from old age there were none there to take their places.

The trees of the Pacific slope are chiefly soft wood, such as pine and fir. Those in the eastern part of the country are largely hard wood, such as maple and oak. There are also dense forests of pine stretching westward from Maine. They extend far beyond the Great Lakes.

Do not think that trees cover all places shaded on the map. In the forest regions there are millions of acres of grass, cotton, grain, tobacco and scores of other kinds of useful plants.

Name six uses of trees.



128. Cattle.

What kind of meat do you like best? What animals supply mutton? What ones supply pork? Beef? Veal?

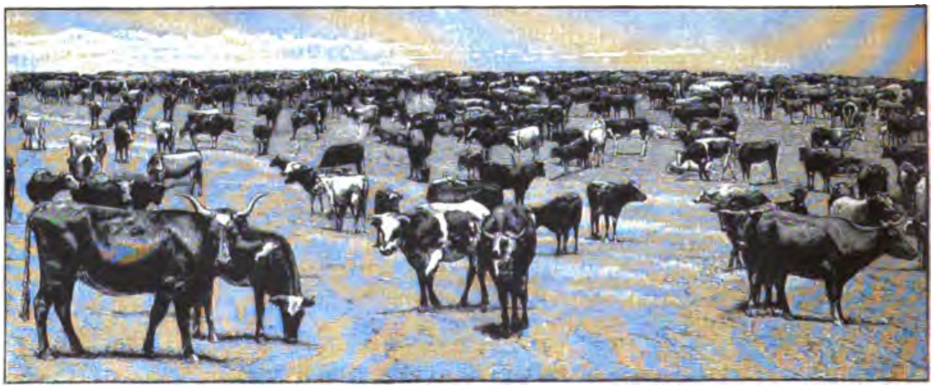
How is butter made? What is cheese made of? What uses are made of the skins of cattle?

There are thousands of cattle in even the smallest of the states, but millions graze on the prairies and western plains.

Texas is the leading cattle state. Iowa holds second place.

The cattle of the *plains* are raised chiefly for beef and hides. The hides are sent east to be made into leather.

A large part of the wealth of the people who live on the prairies consists of cows. These are kept not only for milk, but also for butter and cheese.



A Scene on the Western Plains.

The milk room on a farm is called a *dairy*. Milk, butter and cheese are *dairy products*.

New York is the leading dairy state. The other states also that border on the Great Lakes are rich in dairy products. Iowa takes the highest rank west of the Mississippi river.

The places marked on the map show only where the largest number of cattle are found, and we should not forget that there are many cattle in nearly every settled portion of this broad land.

Chicago and Kansas City are the chief centers for meat packing. Where are these cities?

The states raising the greatest number of sheep are Texas, Ohio and California. Ohio produces the most wool. The states in the northeast part of the United States make a large amount of woolen cloth and yarn.

129. Coal.

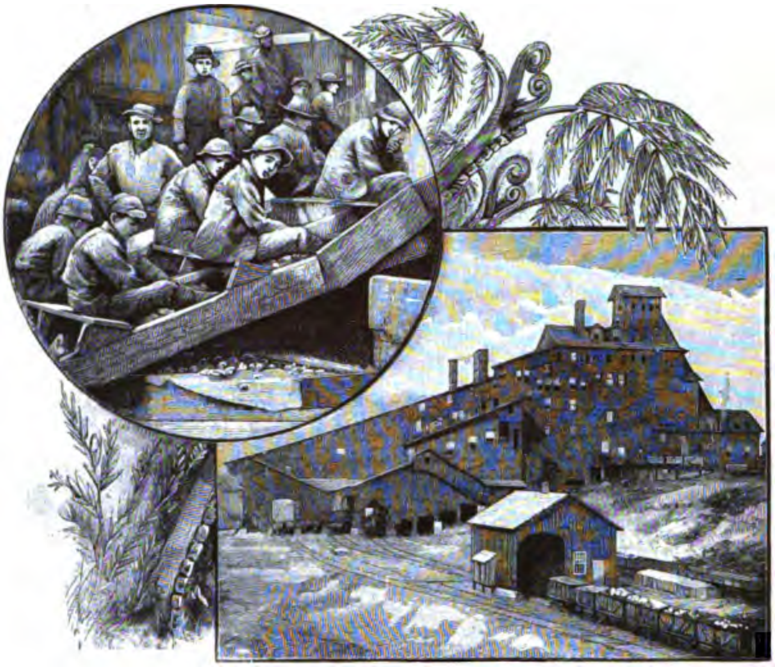
Coal is dug from layers or beds in the ground. The patches of color on this map show where these beds are found.

Coal is formed chiefly of great ferns,[1] mosses and rushes that grew in vast swamps, long ages ago. These plants made thick woody layers in the swamps.

In some way these layers were buried in mud, upon which other plants grew. For ages and ages the work went on, till there were many layers of woody plants buried deep in beds of mud.

This wood was slowly changed into coal, and many of the beds of mud also became rock.

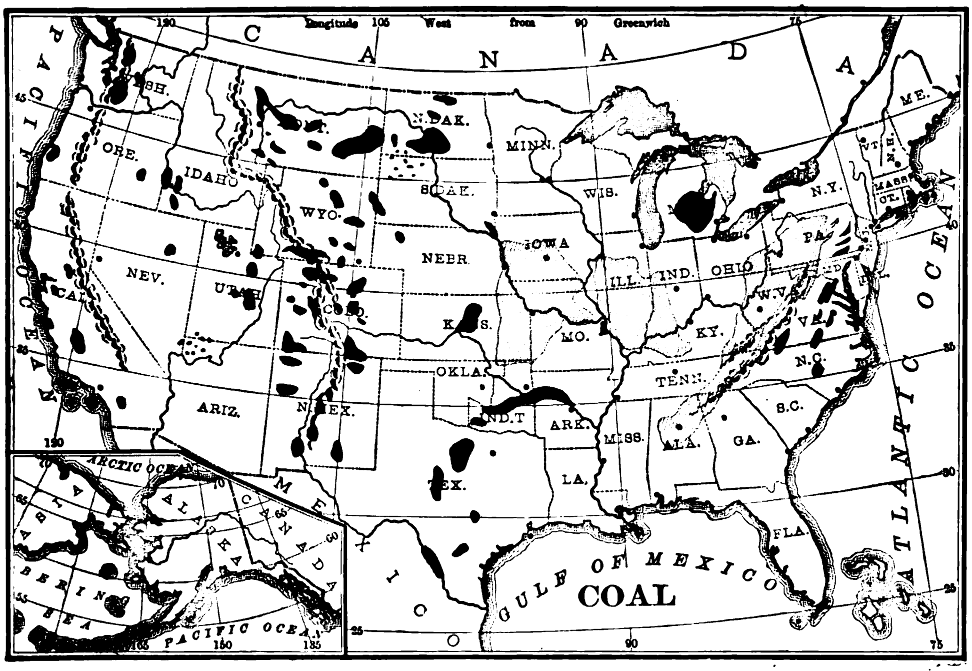
In place of the old swamps there are now broad fields and long mountain ridges, but the hard layers of coal are still under the surface.



Coal Breaker.

By digging into some of the ridges, or deep in the fields, people take out the brown or black layers to burn.

More than one half the coal used in the United States is taken from the mines of Pennsylvania. Illinois ranks second and Ohio third.



When hard coal is taken from mines, much of it is in large pieces. These are crushed between heavy iron or steel rollers in great buildings, called *breakers*.

The boys in the picture are picking slate from coal, as it slides down a long trough or chute.

---

[1] See the tree ferns on page 53.

Iron Mine.

130. Iron.

What objects can you now see that are made of iron? What iron articles are used in your homes?[1]

Name ten iron tools; five iron weapons; three iron machines. What iron goods have you seen in stores? In what parts of your school building is iron used?

Can you name some of the uses of iron on railroads? Do you know what steamships are made of?

Which do you think more useful, wood or iron?

When some kinds of rock are heated very hot, they melt and iron comes from them. The rocks which contain iron are called *iron ores*.

Some of the *ore* is dug from the ground. It is in layers, like coal, but we do not know exactly how the iron rocks were formed.

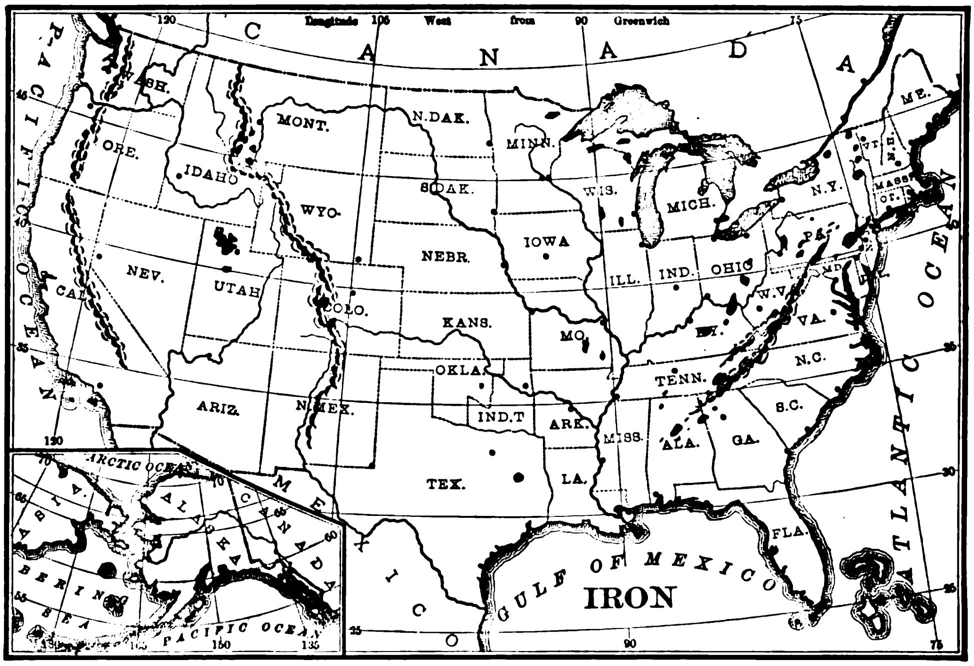
Coal is used in melting iron ore, and it often happens that coal and iron are found near the same places. Many large cities owe their growth to this fact. Can you tell what articles are often made in such cities?

The richest iron mines in this country are near Lake Superior. In the production of iron ore, Michigan leads all other states. Pennsylvania, New York and Alabama also have very rich mines of iron ore.

The great centers of steel and iron manufacture are Chicago and Pittsburg. Here are made most of the steel rails used in this country; also, armor plates for warships, steel plates for other steamships, and nearly every kind of tool and machine used by the people of this great nation.

It is the nearness of coal and iron mines that places these cities in the lead.

Before men could read or write, and while they were yet savages, they melted iron from the ore and shaped it into weapons.



---

[1] Steel is one form of iron.

131.

Gold and Silver.

Do you know any of the uses of gold?

Name some articles that are made of silver. Can you name the silver coins used in the United States? Can you name the gold coins?

What is the color of gold? Of silver?

Which is the more useful, gold or iron?

Mining Town.

A Smeltery.

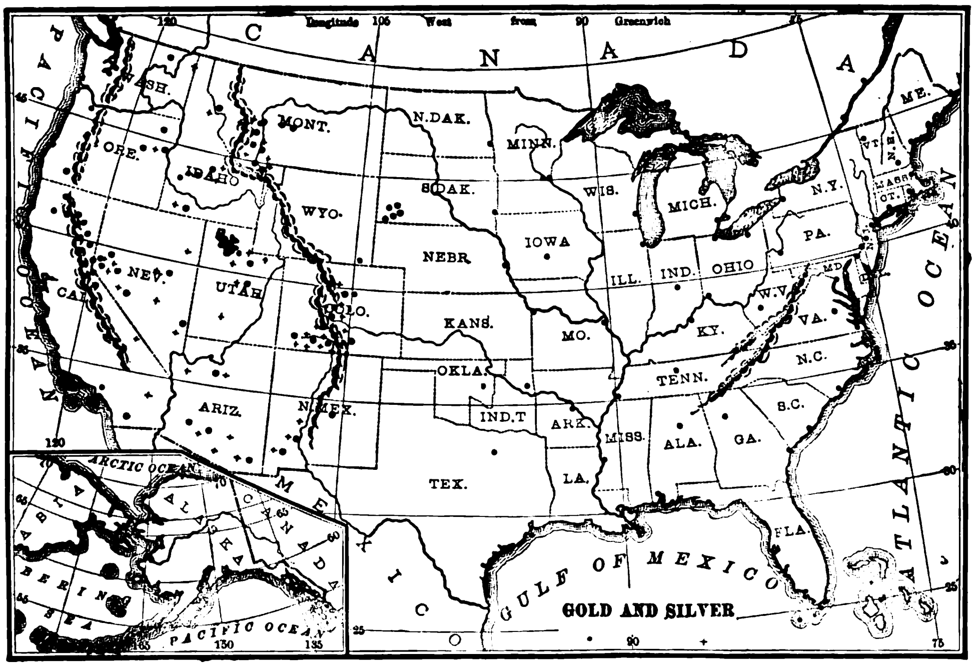
Pure gold is taken from the beds of streams, and also out of the ground. Gold is often mixed with other substances in rocks.

Silver is rarely found in a *pure* state in nature. Gold and silver are often found in the same rock or *ore*. The metal is taken from the ore at a smeltery.

The states in the Rocky Mountain highland yield nearly all the gold and silver mined in this country.

California supplies about one third of the gold, and Colorado about one third of the silver. Montana takes second place in the production of silver. Both of these "precious metals" are found in nearly all the ranges of the Western highland, but the Rocky mountains are richest in silver, and the Sierra Nevadas in gold.

The silver mined each year is worth about twice as much as the gold.



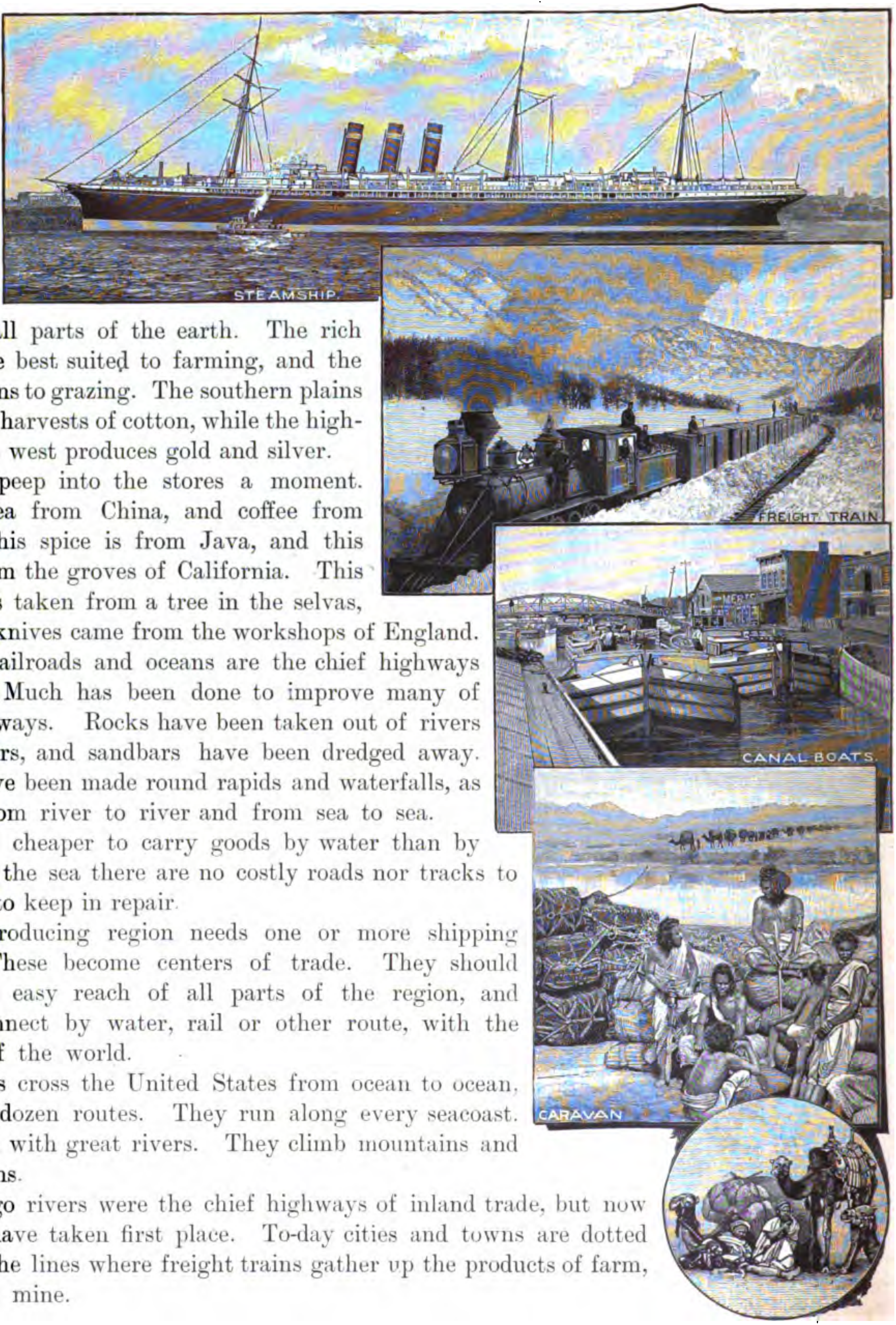
Summary.

Pennsylvania is the banner state for minerals. Michigan, Colorado and Montana are the other leading states.

213713

132.

Routes of Trade.



We have seen that the same products are not found in all parts of the earth. The rich prairies are best suited to farming, and the higher plains to grazing. The southern plains yield large harvests of cotton, while the highland of the west produces gold and silver.

Let us peep into the stores a moment. Here is tea from China, and coffee from Brazil. This spice is from Java, and this fruit is from the groves of California. This rubber was taken from a tree in the selvas, and these knives came from the workshops of England.

Rivers, railroads and oceans are the chief highways of trade. Much has been done to improve many of these highways. Rocks have been taken out of rivers and harbors, and sandbars have been dredged away. Canals have been made round rapids and waterfalls, as well as from river to river and from sea to sea.

It is far cheaper to carry goods by water than by land. On the sea there are no costly roads nor tracks to build and to keep in repair.

Every producing region needs one or more shipping points. These become centers of trade. They should be within easy reach of all parts of the region, and should connect by water, rail or other route, with the markets of the world.

Railroads cross the United States from ocean to ocean, by half a dozen routes. They run along every seacoast. They wind with great rivers. They climb mountains and cross cañons.

Years ago rivers were the chief highways of inland trade, but now railroads have taken first place. To-day cities and towns are dotted all along the lines where freight trains gather up the products of farm, forest and mine.

133. New York.

We will first study the great seaports, and then the inland cities.

New York has a larger trade than any other city in the United States.

The greater part of this city is on an island near the mouth of the Hudson river.

New York has one of the best harbors in the world. Brooklyn and Jersey City are on the same harbor, and the three cities together form one great center of trade. Its commerce is now about equal to that of London, the largest city in the world. The *Erie canal* leads from Lake Erie to the Hudson river, and many of the products of the West reach New York by this route. Long lines of railroad also run to this city, from all parts of the country. The West sends some of its grain, beef and iron, while the South sends part of its cotton and other products to this port.

New York is a great center of manufactures. Nearly all kinds of goods are made in this city and the region around it.

The canals, ships and railroads carry back to the West and South clothing, shoes, tools, tea, coffee and hundreds of other articles.

New York is the chief money center of the country. Many of the longest lines of railroad are owned here.

Public Gardens, Boston.

Water Front, New York.

134. Boston.

As a seaport of the United States, Boston ranks next to New York.

Boston has a fine harbor. This city was for a long time the chief port through which the products of the prairies and plains were sent to foreign lands. The building of the Erie canal turned a large part of this trade to New York. The cities and towns for many miles around Boston have hundreds of busy workshops. Here are many mills making cotton and woolen cloth; shops for boots and shoes; and factories for all kinds of jewelry, clocks, knives, forks and other articles.

Boston is like a main office for these busy workshops. It receives for them such products as raw cotton, wool, hides and leather, and then sends cloth, boots, shoes and other manufactures to all parts of the United States and to many other countries.

Boston handles more wool than any other city in the United States. It is also the greatest boot, shoe and slipper market in the world.

This city and its suburbs have been the homes of many famous patriots, poets and authors.

135. New Orleans.

New Orleans is about one hundred miles from the mouth of the Mississippi river, and forms a natural outlet of trade towards the south. The noble river floats to New Orleans many of the products of the states that line its banks.

New Orleans is the leading market for cotton. Its trade in rice and sugar also is large. The workshops of the city are growing very fast.

Several long lines of railroad center in New Orleans.

136. San Francisco.

This city has one of the largest and most beautiful harbors in the world. Nearly all the foreign trade of the Pacific states passes through this port. The grainfields, vineyards, groves, mines and cattle ranches send many of their products to San Francisco. As a shipping point for wheat and flour, this city is near the head of the list.

The Golden Gate is the name of the entrance to San Francisco harbor or bay.

137. Philadelphia.

This city is on the Delaware river. It is one of the leading ports of the country, and ranks among the first cities in manufactures.

Philadelphia owes its growth in part to a system of canals leading to it from the coal and iron regions. Canals also connect this port with New York and Baltimore, and thus increase its trade. Where is Baltimore?

A Scene in New Orleans.

The nearness of coal and iron gave Philadelphia a strong start in manufactures. Its workshops turn out nearly every kind of iron and steel goods.

This city ships a large amount of coal and iron to other cities.

Philadelphia is reached by long lines of railroad from the west, south and north. Heavy trains bring to this port grain, beef, cotton, tobacco and other products.

The states of Ohio, New York and Pennsylvania raise large flocks of sheep.

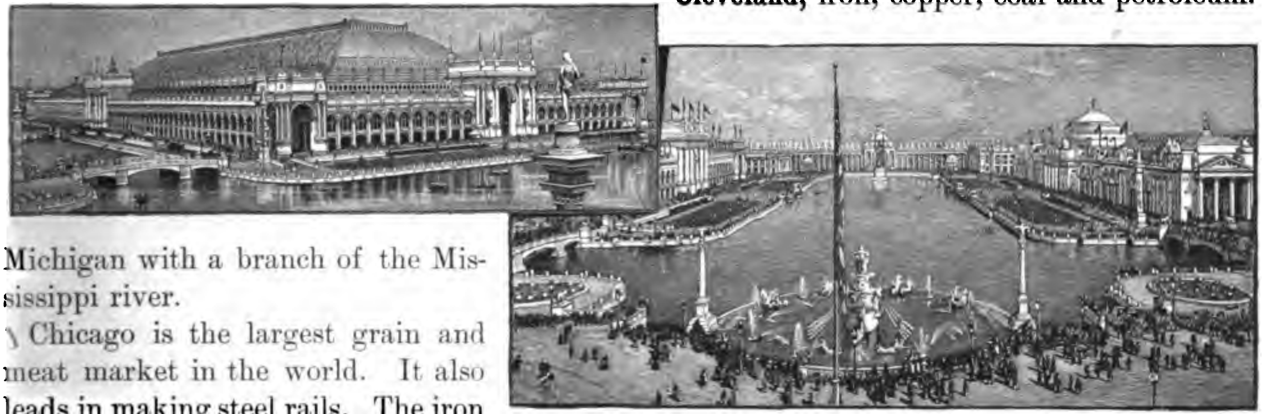
Much of the wool is taken to Philadelphia, and there made into carpets, cloth and yarn. This city leads the world in making carpets.

138. Chicago.

We will now study the leading inland cities. One of the chief routes of trade from the prairies and western plains to the ports of the Atlantic is by way of the Great Lakes.

The amount of shipping on these lakes is very large, and the greater part of the trade passes through Chicago. This city is the greatest railroad center on earth. Lines of steel rails meet here like spokes in a hub. A canal passing through Chicago connects Lake Michigan with a branch of the Mississippi river.

Chicago is the largest grain and meat market in the world. It also leads in making steel rails. The iron ore used in this city is taken chiefly from mines near Lake Superior, while coal is found in large beds south of the city.



World's Fair Buildings, Chicago.

New York is the only city in America larger than Chicago. The latter place is growing more rapidly, perhaps, than any other city in the world.

Chicago is famous as the site of the greatest fair ever held. What fair was it?

139. St. Louis.

St. Louis is the largest center of trade west of the Mississippi river.

The states along this river below St. Louis send cotton, tobacco and sugar to this great market. The western plains and the prairies supply cattle and grain. Cars and boats from St. Louis reach nearly every part of the prairies and plains, carrying flour, clothing, tools, machines and many other articles.

Other large centers of trade[1] are: —

Brooklyn, forming with New York and Jersey City a great triple port. Brooklyn is the fourth city in size in the Union.

Baltimore, one of the leading seaports of the United States. Its trade is about equal in value to that of Philadelphia. Among the chief exports of Baltimore are grain, flour, tobacco, cattle and oysters.

Cincinnati, clothing, liquors and iron goods.

Cleveland, iron, copper, coal and petroleum.

Buffalo, grain, meat, iron and lumber.

Pittsburg, steel, iron, glass and coal.

Detroit, grain, lumber and iron goods.

Milwaukee, iron, liquors, meat and leather.

Newark, clothing, jewelry and leather goods.

Minneapolis, flour and lumber.

Louisville, tobacco; **Omaha,** railroad center; **Rochester,** flour; **St. Paul,** railroad center and river port; **Kansas City** (Mo.), railroad center, meat; **Providence,** cloth, jewelry, engines and tools; **Denver,** silver, lead, lumber and flour; **Indianapolis,** grain, meat and flour; **Allegheny,** steel, iron and leather; **Richmond,** tobacco, flour and iron goods; **Memphis,** cotton; **Wilmington** (Del.), steamships and iron goods; **Grand Rapids,** furniture; **Charleston** and **Savannah,** cotton and turpentine; **Duluth,** wheat; **Galveston,** cotton.

---

[1] Most teachers will doubtless omit from the primary course the *study* of this list. It is placed here for *reference*.

140. The United States.

Review. — Bound the United States.

What parts of the United States are high land? What parts are low plains? What part of the United States is in the warm belt? What part is in the cool belt?

Name some of the products of the prairies; of the western plains; of the southern plains; of the Rocky Mountain highland; of the Appalachian highland; of the Pacific slope; of the Atlantic slope.

What part of the United States produces the largest amount of cotton? Of corn? Of gold and silver? Of beef? Of wheat? Of lumber? Of coal? Of iron?

What have you learned about New York? About Chicago? Philadelphia? St. Louis? Boston? San Francisco? New Orleans?

Which of these cities are seaports? Which part of the United States is most thickly settled? Can you tell why?

What took place on July 4, 1776? Name the capital of the United States. Where is it?

Name the capital of the state in which you live.

TEPEE

PUEBLO

NEGRO CABIN

MEXICAN HUT

141. Canada.

Bound Canada.

Which belts of heat cross Canada?

On what river is Montreal?

A large part of Canada, lying northwest of the Great Lakes, is rich prairie land. It yields heavy crops of wheat, and supports large herds of cattle. A great deal of wheat is also raised north of Lake Erie and Lake Ontario.

The sea on the east of Canada abounds in fish. Every year many cargoes of cod and mackerel are sent from that country to other lands.

The chief exports of Canada are lumber, beef and wheat. Montreal is the leading port.

142. Mexico.

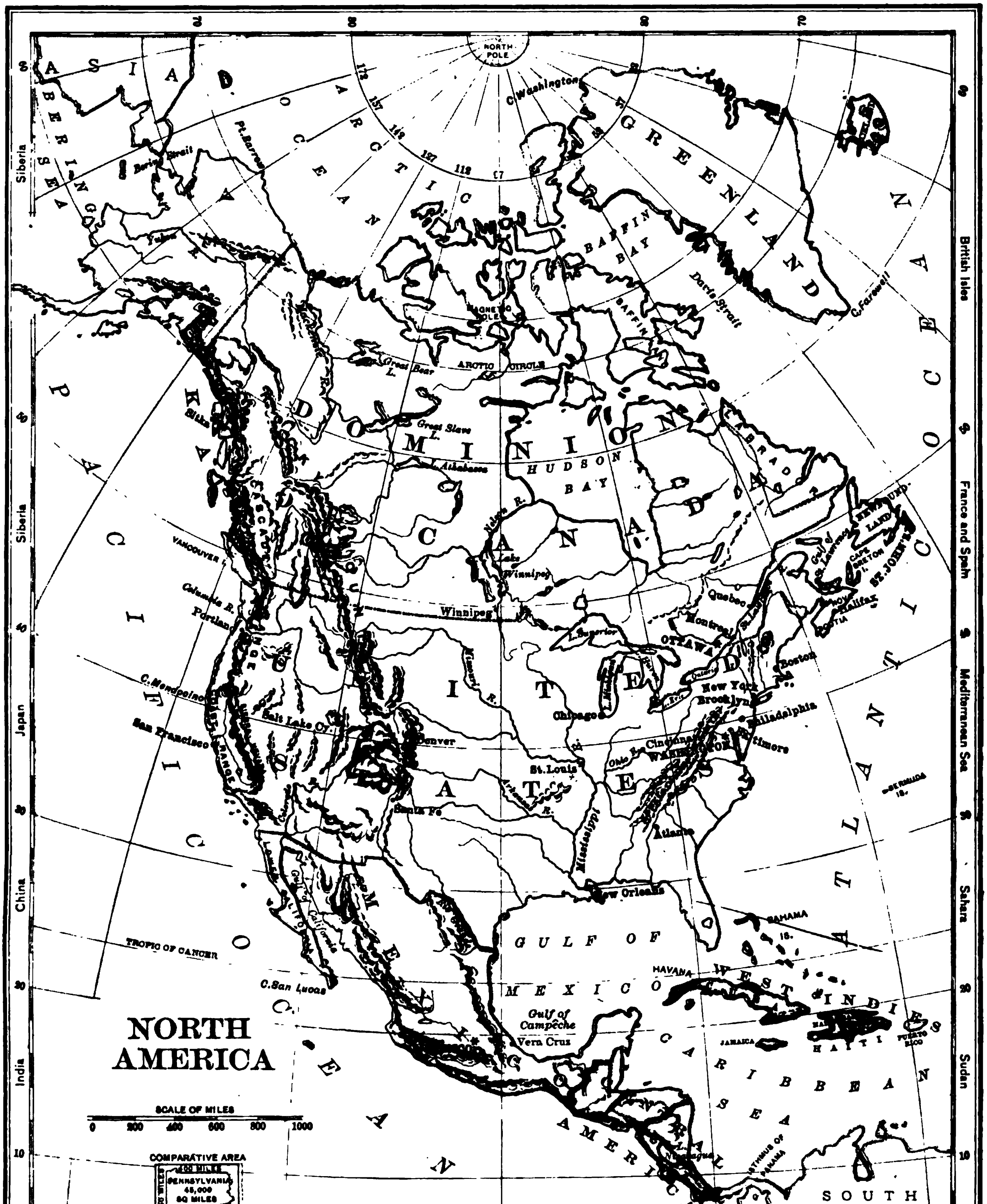
What bodies of water border on Mexico? In which belt of heat does the greater part of Mexico lie?

Name the capital of Mexico. Where is this city?

Mexico consists mainly of a plateau, about a mile and a half above the level of the sea. Along the coast there is a low, narrow plain.

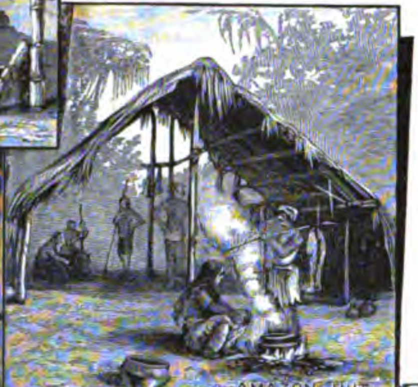
Hemp, cotton, coffee and corn thrive here. Hemp is used in making cloth and rope.

Millions of cattle and horses graze on the high plain of Mexico. Among the mountains there are rich mines of silver. This country sends to the United States silver, hemp, coffee and hides. In return Mexico receives raw cotton, iron goods, cotton cloth and coal. Vera Cruz is the chief port.

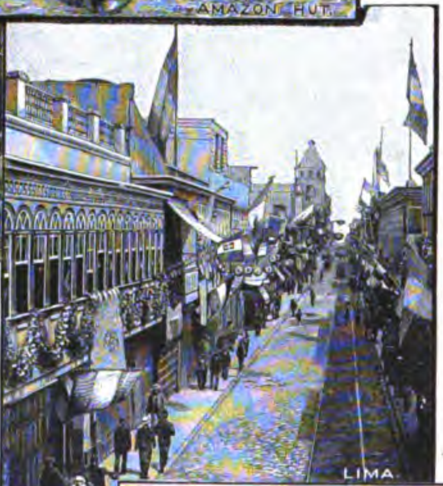


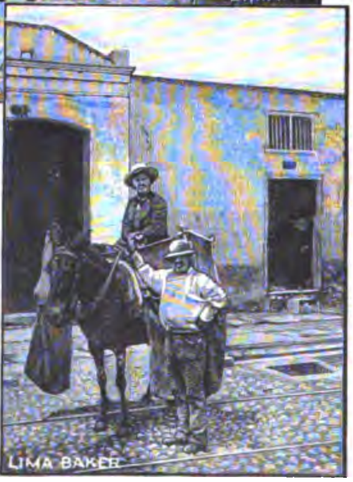
Bradley & Poates, Engr's, N.Y.

HUT IN COLOMBIA.



SILVER MINE, BOLIVIA.





SOUTH AMERICA.

143. Brazil.

What belts of heat cross Brazil?

Where is Rio Janeiro? Where is Pará?

The most valuable product of Brazil is coffee. Rio Janeiro is the chief port in the coffee trade.

Pará is a leading market for India rubber. This is made from the sap of many kinds of trees and shrubs that grow in hot lands. Large rubber trees are found on the hot and steamy banks of the Amazon.

Sugar and tobacco thrive in Brazil, and millions of cattle graze on its southern slopes. That country imports cloth, machines, tools and hardware.

Brazil trades largely with the United States. To what races do the people of Brazil belong? The white race rules in all the countries of South America.

144. Argentine Republic.

What belts of heat cross the Argentine Republic?

Name a large river basin that is partly in this country.

Where is Buenos Ayres?

Millions of cattle, sheep and horses graze on the pampas. Hides, wool and beef are leading articles of trade. Wheat and corn are the chief products of the farms.

Buenos Ayres is the leading port for the products of the La Plata basin.

The imports of the Argentine Republic are cloth and railway supplies, — engines, rails and wire. The trade of this country with the United States is small.

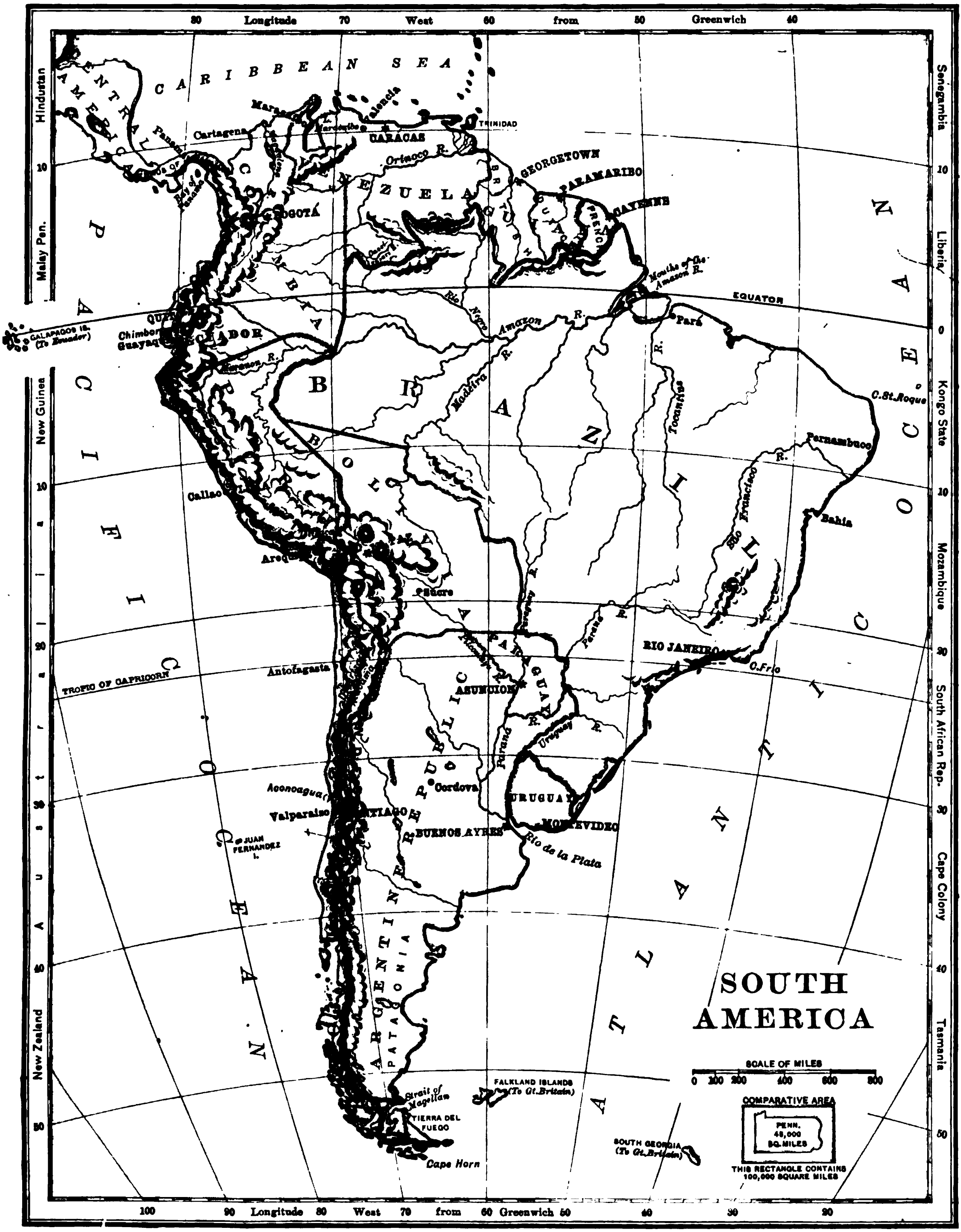
145. Chile.

What belts of heat cross Chile?

Where is Valparaiso?

The wealth of Chile is in its mines and farms. The leading products are niter, copper, silver and wheat.

The imports of Chile include cloth, beef and sugar. The trade with the United States is very light. Valparaiso is the leading port of Chile.


SOUTH AMERICA
Longitude West from Greenwich
CARIBBEAN SEA
CENTRAL AMERICA
PACIFIC OCEAN
ATLANTIC OCEAN
Cartagena
Panama
Maracaibo
Valencia
CARACAS
TRINIDAD
Orinoco R.
VENEZUELA
GEORGETOWN
PARAMARIBO
CAYENNE
BOGOTÁ
COLOMBIA
Mouths of the Amazon R.
EQUATOR
QUITO
Chimborazo
Guayaquil
ECUADOR
GALAPAGOS IS. (To Ecuador)
Rio Negro
Amazon R.
Pará
Madeira R.
Tocantins
C. St. Roque
Pernambuco
BRAZIL
Sao Francisco
Bahia
Callao
Arequipa
Sucre
BOLIVIA
PERU
Paraná R.
RIO JANEIRO
C. Frio
Antofagasta
TROPIC OF CAPRICORN
ASUNCION
PARAGUAY
Uruguay R.
ARGENTINE REPUBLIC
Cordova
Aconcagua
Valparaiso
SANTIAGO
BUENOS AYRES
URUGUAY
MONTEVIDEO
Rio de la Plata
JUAN FERNANDEZ I.
CHILE
PATAGONIA
Strait of Magellan
TIERRA DEL FUEGO
Cape Horn
FALKLAND ISLANDS (To Gt. Britain)
SOUTH GEORGIA (To Gt. Britain)
SCALE OF MILES
0 100 200 400 600 800
COMPARATIVE AREA
PENN. 45,000 SQ. MILES
THIS RECTANGLE CONTAINS 100,000 SQUARE MILES
Hindustan
Malay Pen.
New Guinea
Australia
New Zealand
Senegambia
Liberia
Kongo State
Mozambique
South African Rep.
Cape Colony
Tasmania
80 70 60 50 40
100 90 80 70 60 50 40 30 20
10 0 10 20 30 40 50

146. The British Isles.

Where is England? Ireland? Scotland? Wales?

Where is London? Glasgow? Liverpool? Dublin?

In the British Isles there are vast beds of coal and iron. Near these, many great workshops have been built.

A Norwegian.

A German.

Scotch Piper.

The people of the British Isles weave into cloth fully one third of the raw cotton and wool raised in the world. They also produce about one third of the iron and steel. Their ships carry on one third of the ocean commerce.

To the British Isles the United States sends cotton, grain, meat, tobacco, copper and many other products. Which of these are needed for the workshops? Which are used for food?

The British Isles send to the United States iron and steel goods, cotton and woolen cloth, silk and many other articles from the workshops.

London, on the Thames river, is the chief seaport and railroad center of the British Isles. It is the largest city in the world.

The greater part of the trade of the United States with the British Isles is by way of Liverpool, a city near the west coast.

Scotland is noted for its iron and steel ships. They are built on the Clyde river, near Glasgow.

In making linen goods Ireland leads the world.

147. Germany.

Where is Germany?

Name the capital of Germany. On what river is Hamburg?

Germany has large mines of coal and iron. Like the British Isles, Germany is a land of workshops.

Hamburg is the chief seaport on the mainland of Europe. Berlin is the center of vast railway and canal systems. Its inland trade is very large.

The trade of the United States with Germany is in about the same kinds of goods as with the British Isles.

148. France.

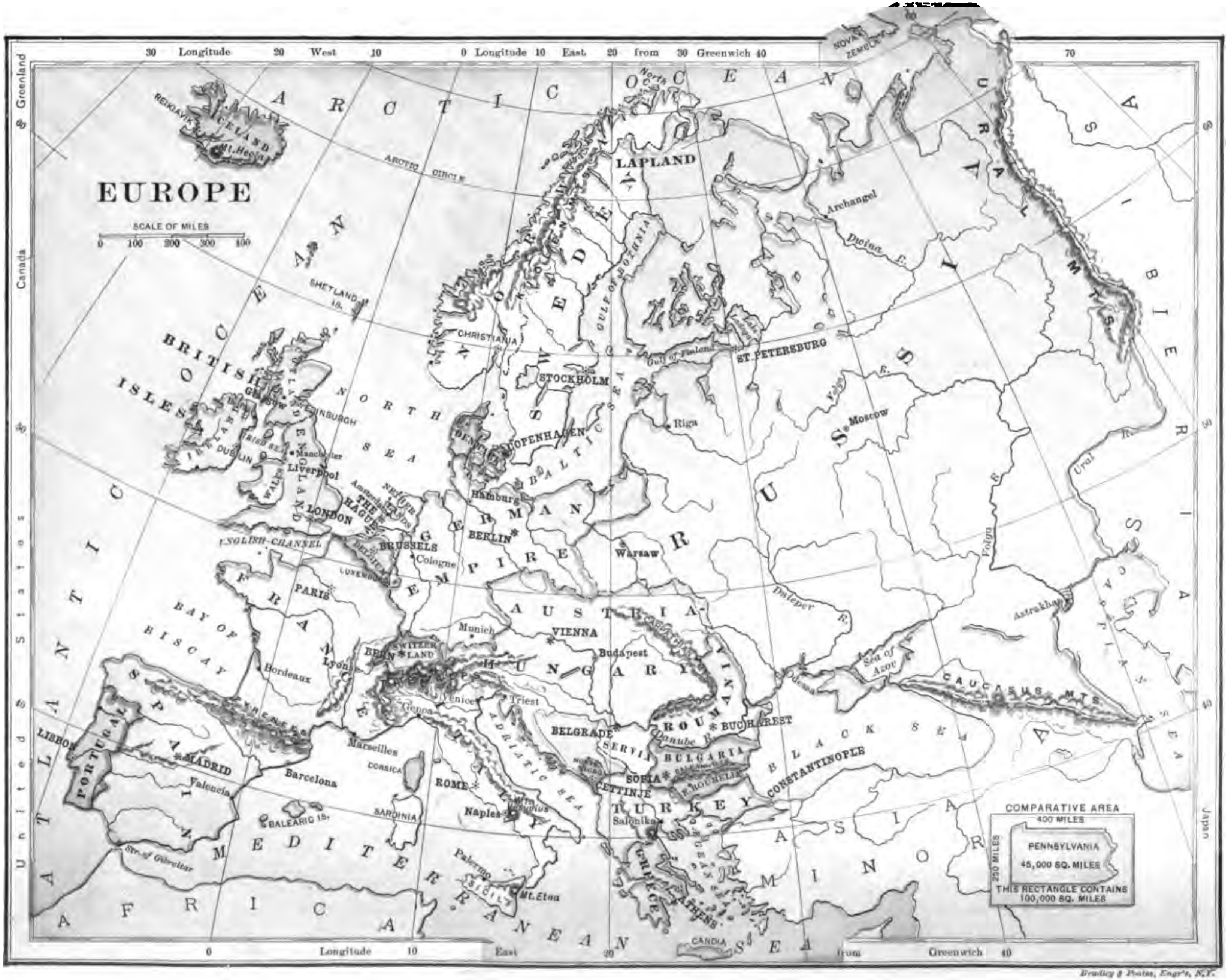
Where is France?

Name the capital of France? On what river is it? Where is Lyons?

Only one city in the world is larger than Paris, the center of trade for France.

The United States sends to Paris about the same kinds of goods as to Liverpool and Hamburg. France sends to the United States woolen and silk goods, wines and millinery.

A Scene near Venice.

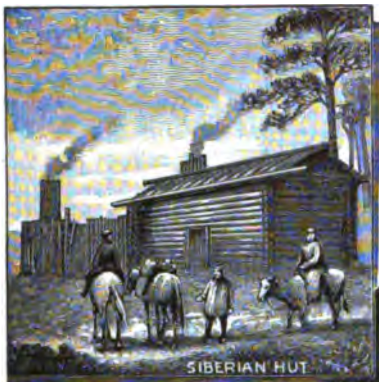


Bradley & Poates, Engr's, N.Y.

149. India.

Where is India? Name a large city in the delta of the Ganges.

The Ganges river floats large boats a thousand miles through its fertile valley. Which belt of heat crosses this valley?


SIBERIAN HUT

MONGOLIAN HUT

SYRIAN

ARAB

HINDOOS

CHINAMAN

India is not quite one half so large as the United States, but it has four times as many people as our country. Rice is the food of about one third the people of the Ganges valley.

India raises large crops of rice, cotton, wheat, poppy and many other plants. The poppy plant yields a drug, called *opium*. A large part of these products is sent to England and to China.

India imports cloth, machines, hardware, sugar and many other kinds of goods.

Bombay and Calcutta are the leading ports of India. Each of these cities has about one half as many people as there are in the city of New York.

The greater part of India is under British rule. Most of the people are *Hindus* (or *Hindoos*). They belong to the white race.

150. China.

What have you read about the plains of China? Find the city of Canton. Where is the island of Hongkong?

The trade of China with other nations is carried on mainly through Hongkong, a British island.

The chief products of China are tea and silk. The leading imports are cotton cloth and opium.

On the Yang-tse-Kiang, steamers can go a thousand miles through the crowded plains of China.

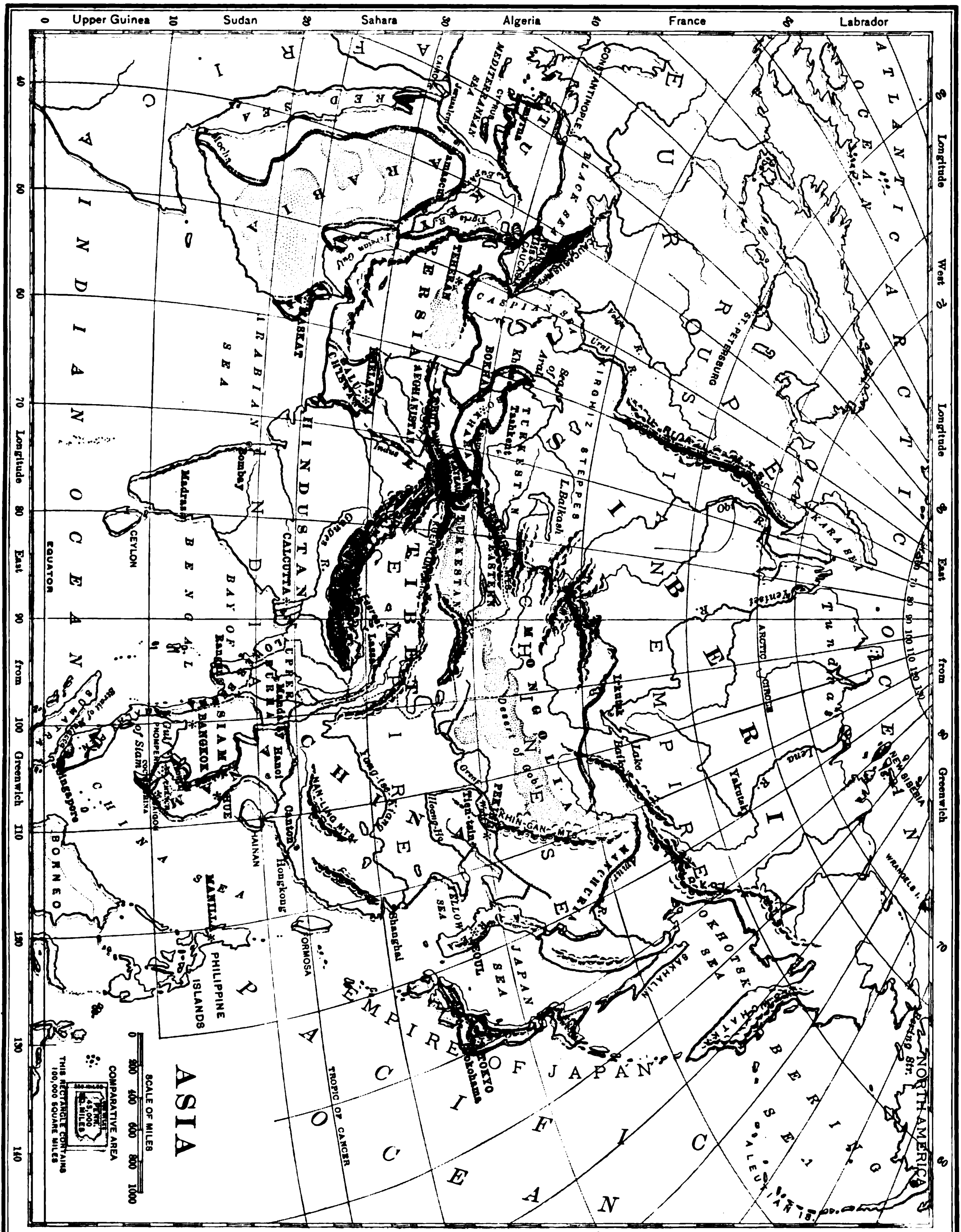
151. Japan.

Where is Japan? What have you read about the people of this country? Name some of its products.

Where is Yokohama? Where is Tokyo?

Tokyo is nearly as large as New York. Yokohama is the leading port of Japan.

The chief exports of Japan are silk and tea. The chief imports are cotton and woolen goods, sugar and kerosene.



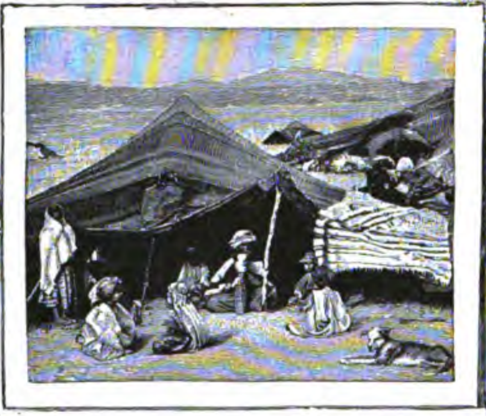
Brading & Yeates, Eng'rs, N.Y.

152. Egypt.

What have you read about the Nile river? What seas border on Egypt? Where is Cairo?

In which belt of heat is the greater part of Egypt? What part of the United States is in the same belt?

The spring harvest in Egypt consists largely of grains. The autumn harvest includes cotton, sugar and rice. Egypt sells raw cotton and buys cloth. There is also a light trade in many other articles.



Bedouins.

FELLAH

Buffalo of Egypt.

Negress and Child.

Cairo is the chief center of trade in Egypt. Nearly all the raw cotton goes to England, and nearly all the cloth sent to Egypt is made in English workshops.

153. Cape Colony.

In which belt of heat is the southern part of Africa? Where is Cape Colony? Look at the relief map of Africa, and describe the surface of Cape Colony.

Where is Cape Town?

South Africa is noted for its rich diamond fields. These precious stones yield more income than all the other articles sold by the Colony.

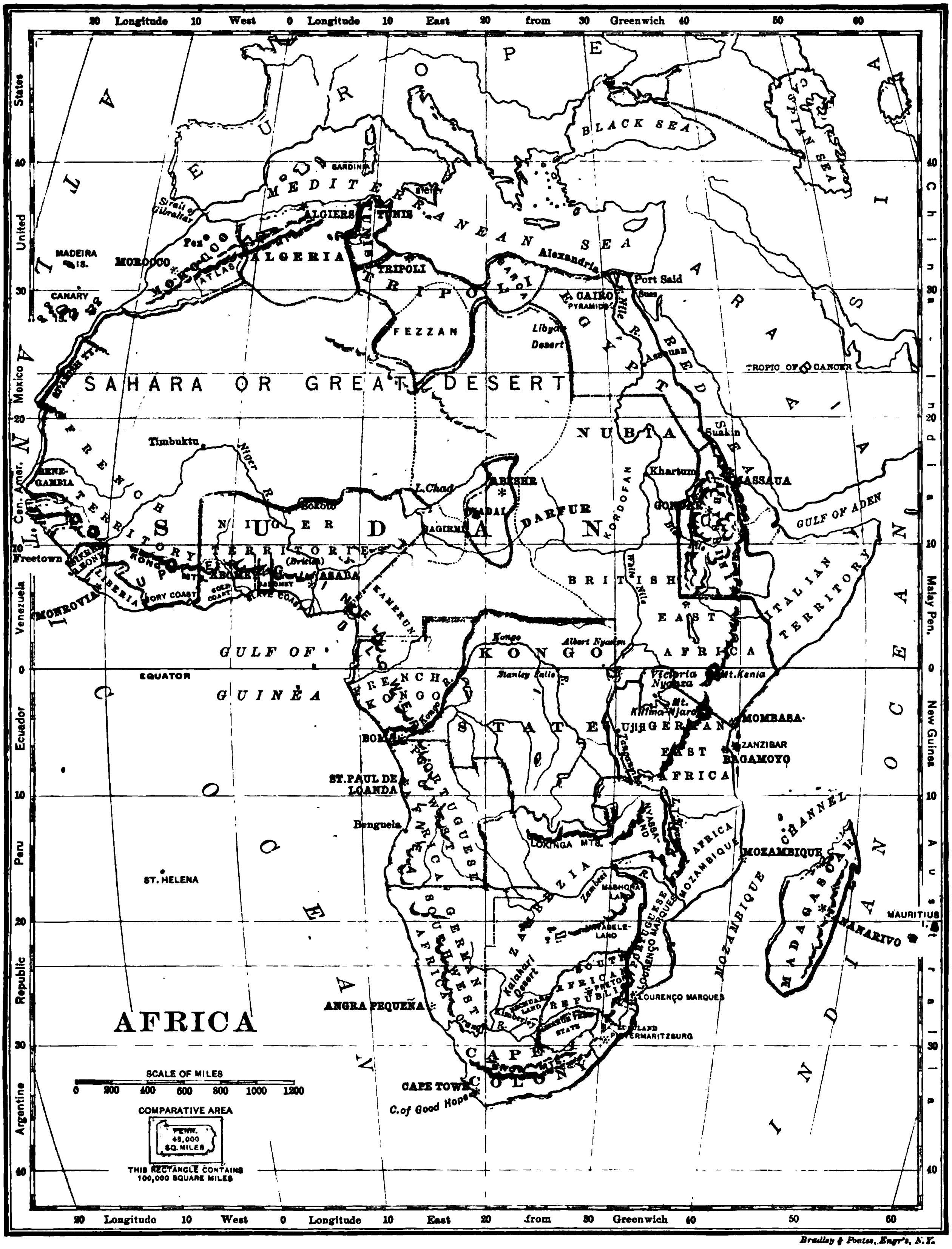
Millions of sheep and cattle are raised in southern Africa. Wool and hides are leading exports.

This land supplies many fine ostrich feathers.

The import trade of Cape Colony consists largely of cloth. England controls the greater part of the trade.

Cape Colony is under British rule.

What races of people are found in southern Africa?



AFRICA

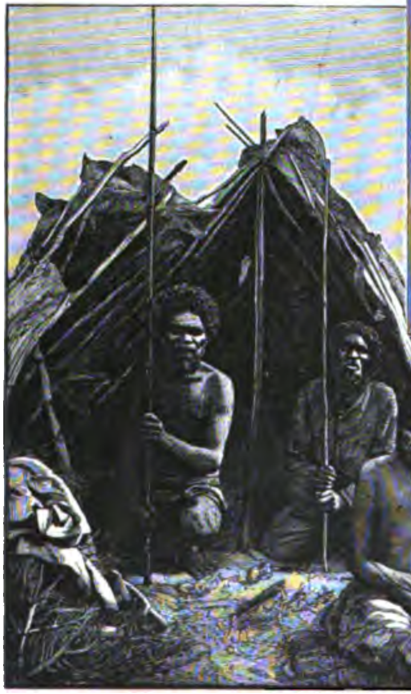
Bradley & Poates, Engr's, N.Y.

154. Victoria.

Australia consists of several British colonies. Chief among these are Victoria and New South Wales. Which belts of heat cross Victoria?

The gold mines of Victoria rank next to those of the United States. The sheep ranches of this colony produce wool that is worth three times as much as the gold taken from its mines.

This region raises many cattle and a large amount of wheat. The chief exports are wool, gold, wheat and cattle.



Natives of Australia.

The leading imports are iron goods, cloth, sugar and tea. A great deal of wool from the other colonies finds a market here. Most of it is again sold abroad.

Nearly all the foreign trade of Australia is carried on with England.

Melbourne is the chief port of Australia. Where is this city?

Melbourne is on a fine harbor, and is a little larger than Boston.

Natives and Temple, Solomon Islands.

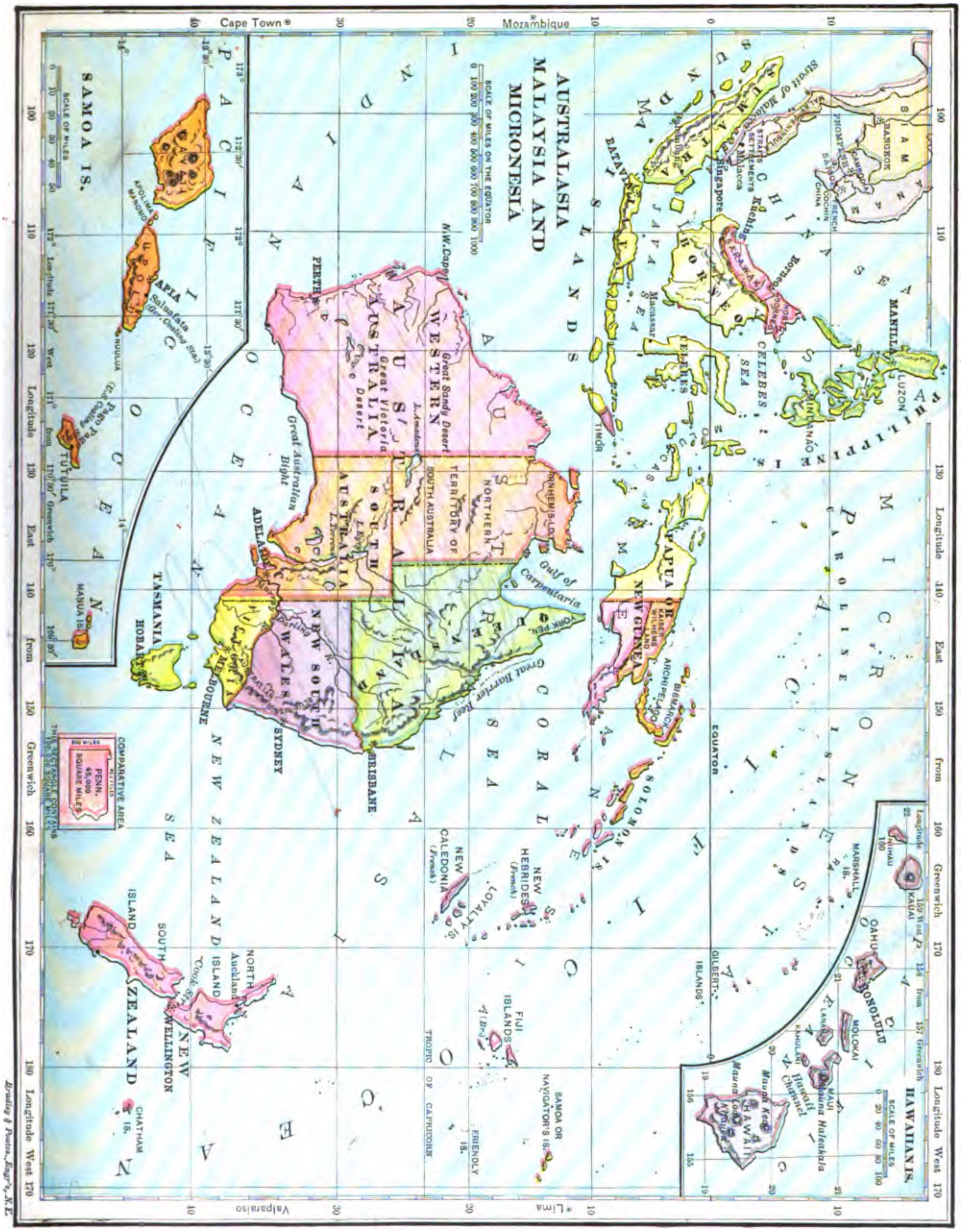
155. New South Wales.

In what direction is this colony from Victoria? Which belt of heat crosses New South Wales?

New South Wales produces much more wool but less gold than Victoria does. A large amount of corn is raised in New South Wales. Oranges and sugar cane also thrive there.

The trade of these two colonies is nearly alike in kind. Sydney is the leading port of New South Wales. Where is this city?

Before the white man settled in Australia it was held by black people. A few thousand of these still live in this land.



Bradley & Poates, Engr's, N.Y.

SUPPLEMENT.

REFERENCE TABLES.

Grand Divisions and Leading Countries.

	Area in Square Miles.	Population (1890).
NORTH AMERICA . .	**8,000,000**	**90,000,000**
United States . . .	3,556,300	63,000,000
Canada	3,470,000	4,850,000
Mexico	767,000	12,000,000
SOUTH AMERICA . .	**7,000,000**	**36,500,000**
Brazil.	3,215,000	14,000,000
Argentine Republic .	1,125,000	4,250,000
Chile	300,000	3,250,000
EUROPE	**3,800,000**	**360,000,000**
British Isles . . .	120,000	38,000,000
Germany	208,000	50,000,000
France	204,000	38,350,000
Russia	2,180,000	100,000,000
Austria-Hungary . .	240,000	41,000,000
ASIA	**17,000,000**	**850,000,000**
India	1,560,000	290,000,000
China.	4,200,000	400,000,000
Japan.	147,000	40,000,000
AFRICA	**11,500,000**	**130,000,000**
Egypt	400,000[1]	7,000,000
Cape Colony . . .	220,000	1,550,000
Kongo State . . .	900,000	17,000,000
AUSTRALIA	**3,000,000**	**3,500,000**
Victoria	88,000	1,140,000
New South Wales .	310,000	1,130,000

Area of Oceans.

	Square Miles.
Pacific.	70,000,000
Atlantic	35,000,000
Indian	23,000,000
Antarctic.	7,000,000
Arctic	4,000,000

The United States.

States.	Area in Square Miles.	Population (1890).
Alabama	52,250	1,513,017
Alaska	531,410	31,795
Arizona	113,020	59,620
Arkansas	53,850	1,128,179
California	158,360	1,208,130
Colorado	103,925	412,198
Connecticut	4,990	746,258
Delaware	2,050	168,493
District of Columbia . .	70	230,392
Florida	58,680	391,422
Georgia	59,475	1,837,353
Idaho	84,800	84,385
Illinois	56,650	3,826,351
Indiana	36,350	2,192,404
Indian Territory	31,400	186,490
Iowa	56,025	1,911,896
Kansas	82,080	1,427,096
Kentucky	40,400	1,858,635
Louisiana	48,720	1,118,587
Maine	33,040	661,086
Maryland	12,210	1,042,390
Massachusetts	8,315	2,238,943
Michigan	58,915	2,093,889
Minnesota	83,365	1,301,826
Mississippi.	46,810	1,289,600
Missouri	69,415	2,679,184
Montana	146,080	132,159
Nebraska	77,510	1,058,910
Nevada	110,700	45,761
New Hampshire	9,305	376,530
New Jersey	7,815	1,444,933
New Mexico	122,580	153,593
New York	49,170	5,997,853
North Carolina	52,250	1,617,947
North Dakota	70,795	182,719
Ohio	41,060	3,672,316
Oklahoma	39,030	61,834
Oregon	96,030	313,767
Pennsylvania	45,215	5,258,014
Rhode Island	1,250	345,506
South Carolina	30,570	1,151,149
South Dakota	77,650	328,808
Tennessee	42,050	1,767,518
Texas	265,780	2,235,523
Utah	84,970	207,905
Vermont	9,565	332,422
Virginia	42,450	1,655,980
Washington	69,180	349,390
West Virginia	24,780	762,794
Wisconsin	56,040	1,686,880
Wyoming	97,890	60,705

---

[1] The fertile portion of Egypt consists of only about 13,000 square miles.

Leading Cities of the United States.

Cities.	Rank.	1890.	Rank.	1860.
New York, N. Y.	1	1,515,301	1	805,658
Chicago, Ill.	2	1,099,850	9	109,260
Philadelphia, Pa.	3	1,046,964	2	565,529
Brooklyn, N. Y.	4	806,343	3	266,661
St. Louis, Mo.	5	451,770	8	160,773
Boston, Mass.	6	448,477	5	177,840
Baltimore, Md.	7	434,439	4	212,418
San Francisco, Cal.	8	298,997	15	56,802
Cincinnati, Ohio	9	296,908	7	161,044
Cleveland, Ohio	10	261,353	21	43,417
Buffalo, N. Y.	11	255,664	10	81,129
New Orleans, La.	12	242,039	6	168,675
Pittsburg, Pa.	13	238,617	17	49,217
Washington, D. C.	14	230,392	14	61,122
Detroit, Mich.	15	205,876	19	45,619
Milwaukee, Wis.	16	204,468	20	45,246
Newark, N. J.	17	181,830	11	71,941
Minneapolis, Minn.	18	164,738	109	2,564
Jersey City, N. J.	19	163,003	28	29,226
Louisville, Ky.	20	161,129	12	68,033
Omaha, Neb.	21	140,452	111	1,883
Rochester, N. Y.	22	133,896	18	48,204
St. Paul, Minn.	23	133,156	73	10,401
Kansas City, Mo.	24	132,716	97	4,418
Providence, R. I.	25	132,146	16	50,666
Denver, Colo.	26	106,713	96	4,749
Indianapolis, Ind.	27	105,436	46	18,611
Allegheny, Pa.	28	105,287	30	28,702

Leading Foreign Cities.

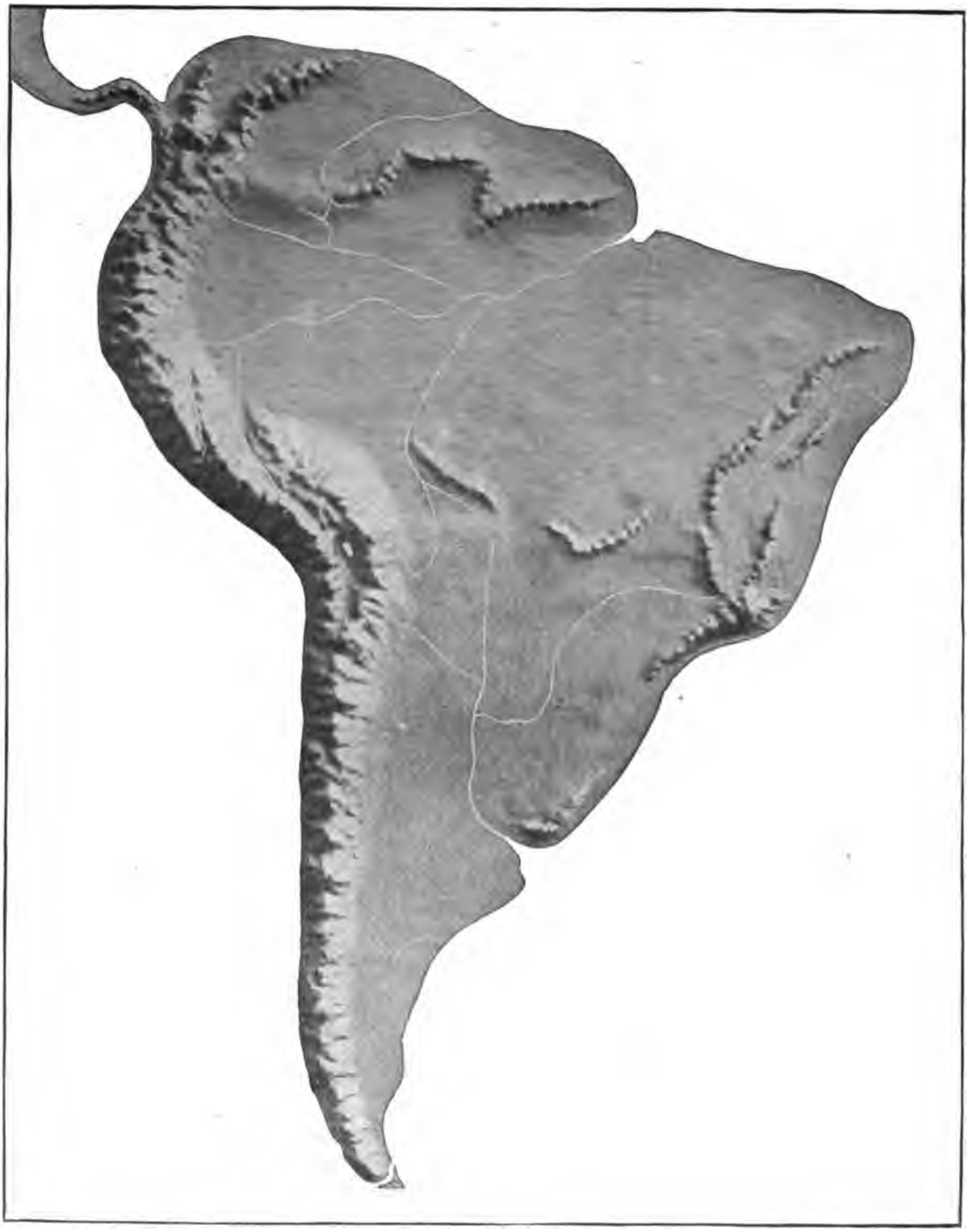
City.	Country.	Population.
London (1891)	England	4,211,060
Paris (1891)	France	2,447,960
Canton (1890)	China	1,600,000
Berlin (1890)	Germany	1,578,790
Tokyo (1890)	Japan	1,389,680
Vienna (1891)	Austria	1,364,540
St. Petersburg (1889)	Russia	1,003,310
Peking (1890)	China	1,000,000
Constantinople (1885)	Turkey	873,560
Calcutta (1891)	India	840,130
Bombay (1891)	India	804,470
Rio Janeiro (1892)	Brazil	800,000
Moscow (1888)	Russia	798,740
Glasgow (1891)	Scotland	618,470
Hamburg (1890)	Germany	569,260
Buenos Ayres (1890)	Argentine Rep'lic,	561,160
Liverpool (1891)	England	517,950
Budapest (1891)	Hungary	506,380
Manchester (1891)	England	505,340
Melbourne (1891)	Victoria	490,900
Rome (1891)	Italy	436,180
Amsterdam (1891)	Holland	426,910
Cairo (1890)	Egypt	390,000
Sydney (1891)	New South Wales,	383,390
Mexico (1890)	Mexico	329,540
Edinburgh (1891)	Scotland	264,800
Dublin (1891)	Ireland	245,000
Montreal (1891)	Canada	216,650
Havana (1887)	Cuba	198,270
Pernambuco (1892)	Brazil	190,000
Yokohama (1890)	Japan	127,990
Valparaiso (1891)	Chile	115,000
Lima (1891)	Peru	104,000
Cape Town (1891)	Cape Colony	84,000
Geneva (1893)	Switzerland	78,000
Pará (1892)	Brazil	65,000
Vera Cruz (1890)	Mexico	24,000

Rivers and River Basins.

River.	Area of Basin, Square Miles.	Length in Miles.
Amazon	2,500,000	4,000
Kongo	1,500,000	3,000
Nile	1,400,000	4,000
Mississippi — Missouri	1,250,000	4,200
La Plata	1,250,000	2,300
Yang-tse-Kiang	500,000	3,300
Volga	500,000	2,300
Ganges	450,000	1,800
St. Lawrence	350,000	2,000
Danube	300,000	2,000
Orinoco	300,000	1,500
Columbia	250,000	1,400
Colorado	250,000	1,100

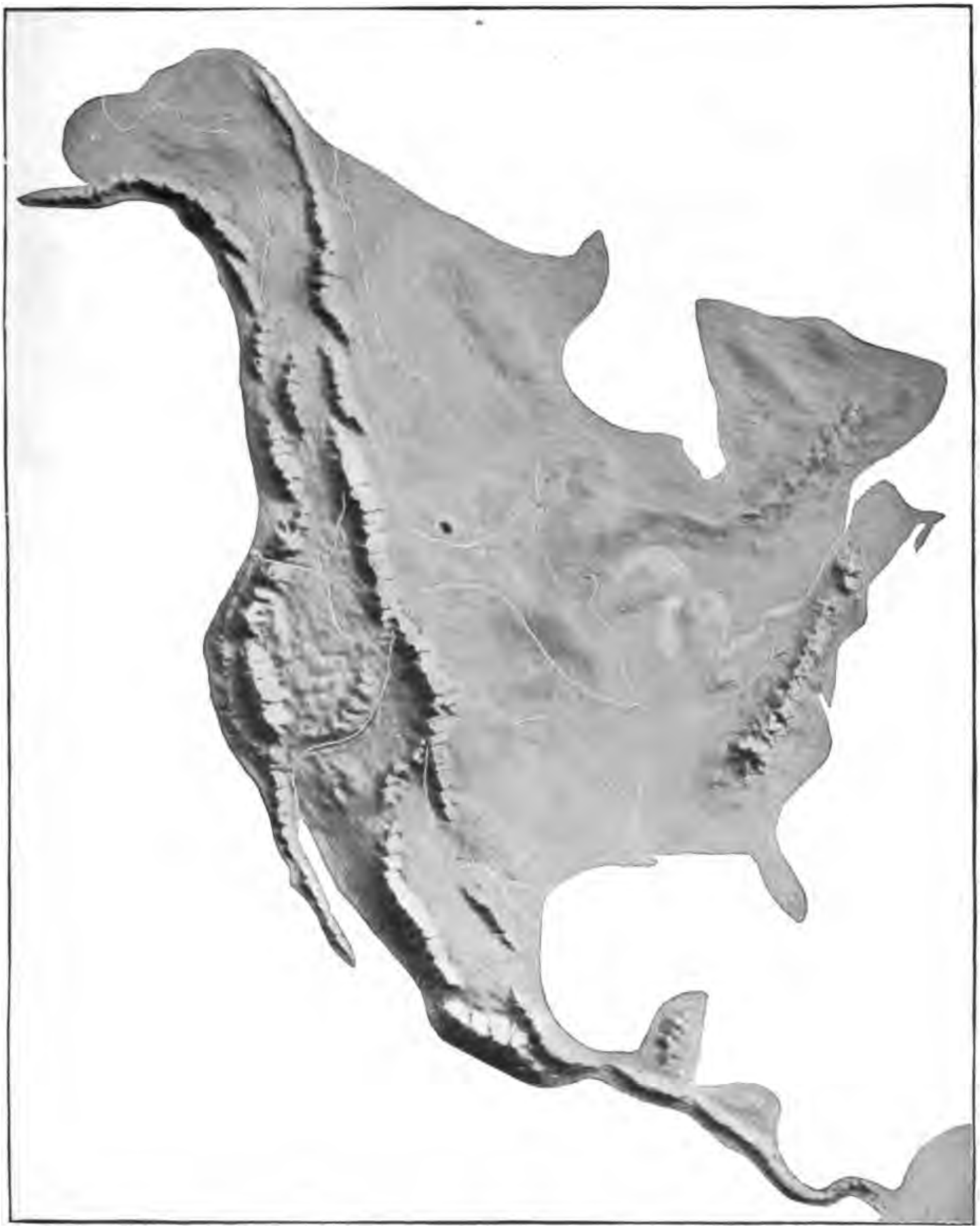
Average Heights of Plateaus.

	Feet.
Tibet	14,000
Bolivia	12,000
Mexico	8,000
Abyssinia	7,000
Great Basin	4,000
Gobi	4,000
Brazil	2,000
Switzerland	2,000

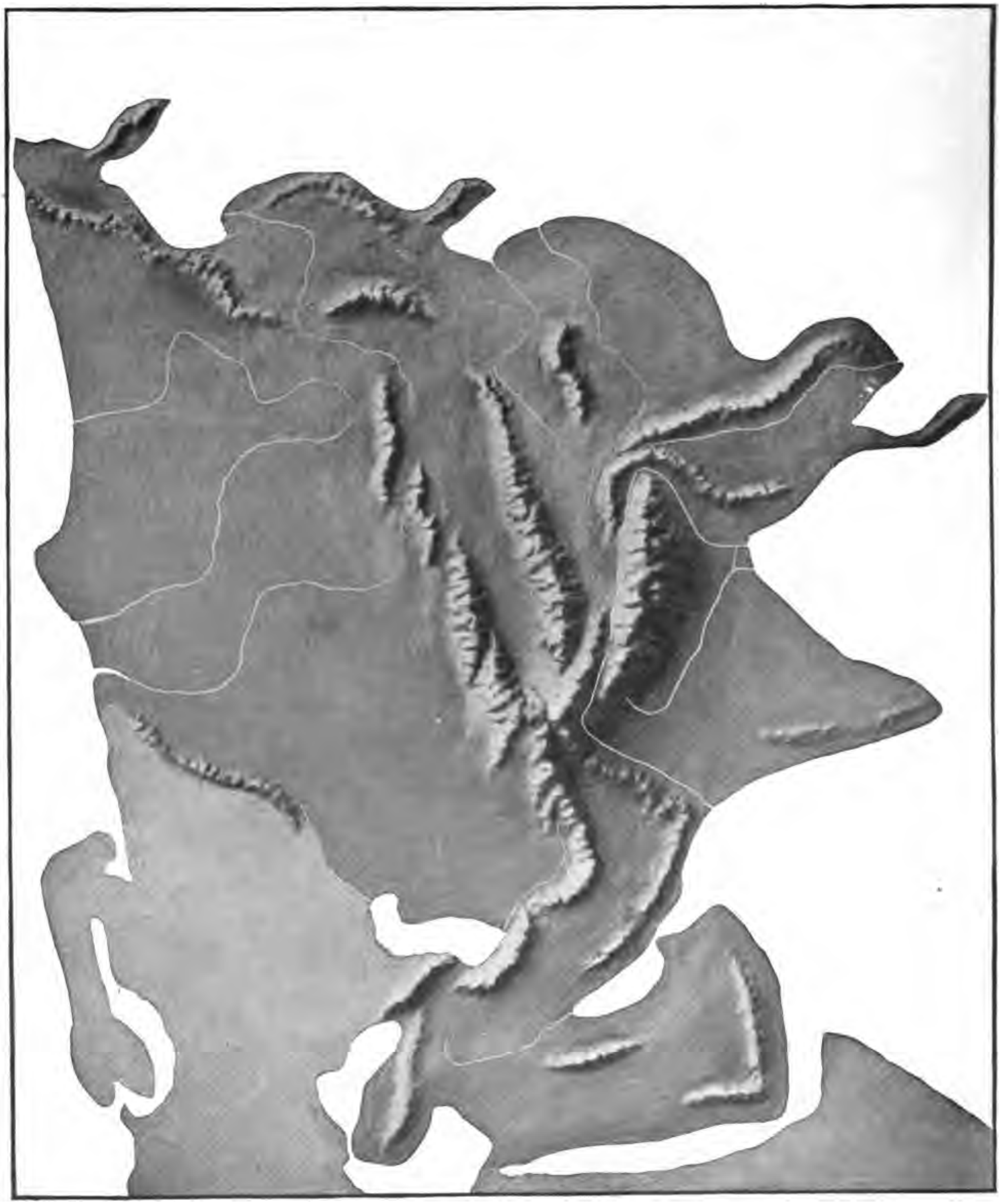


MODEL RELIEF MAP OF SOUTH AMERICA.

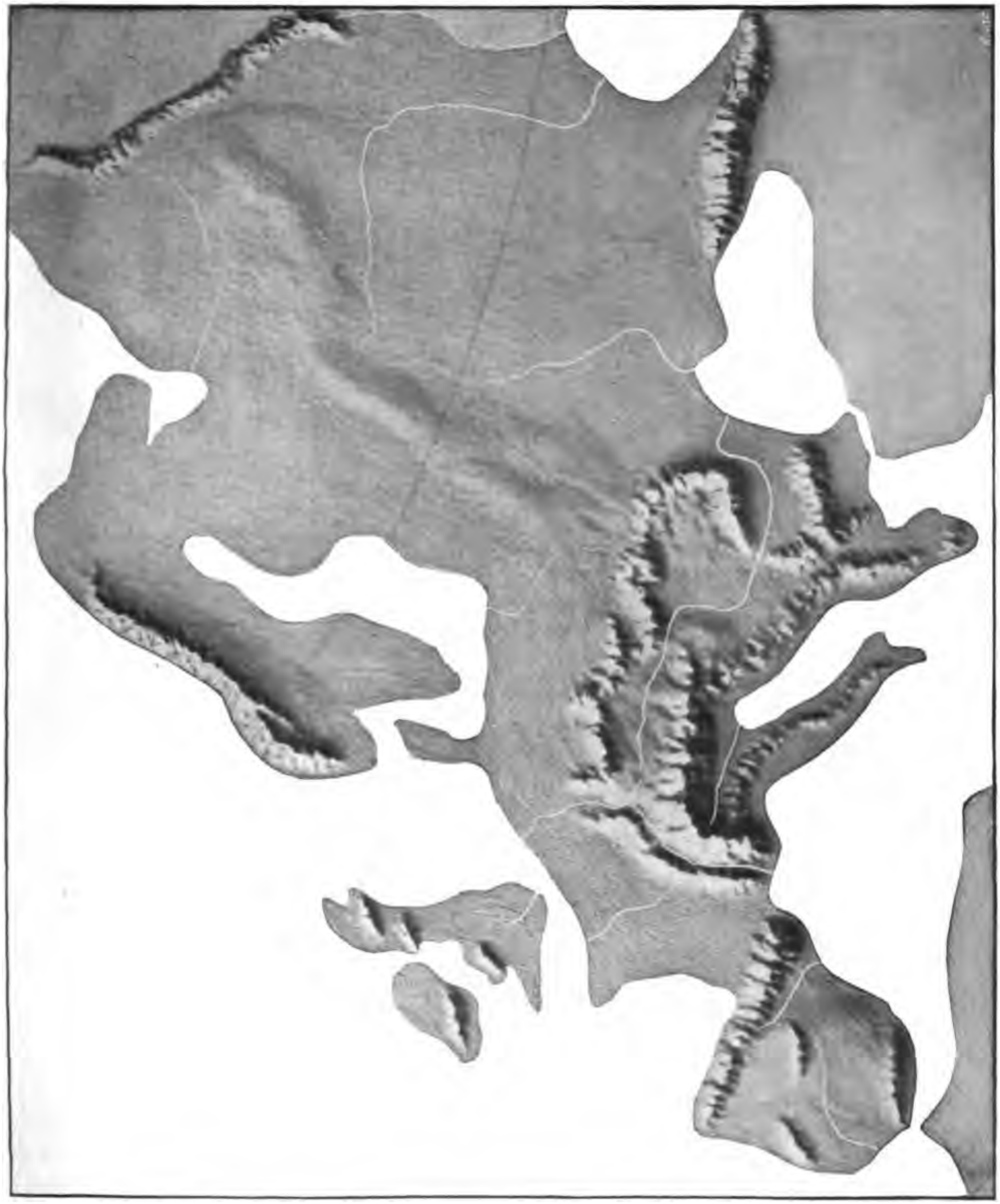
NOTE. — The maps of this series, pages 120 to 125, are inserted as a guide for *teachers* in drawing and modeling. The outlines are so simple that no construction lines are needed. Pupils can easily learn *to sketch* these maps.



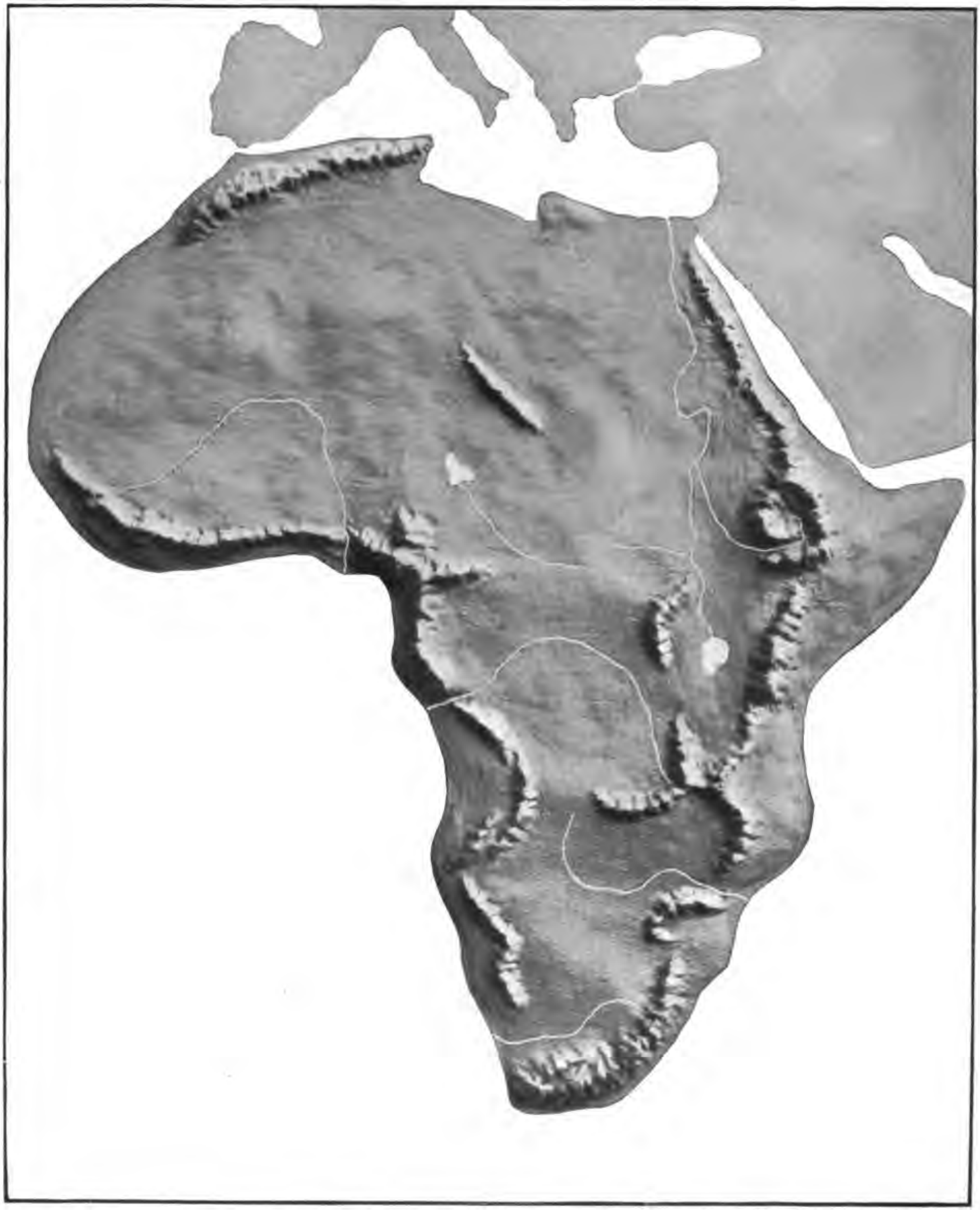
MODEL RELIEF MAP OF NORTH AMERICA.



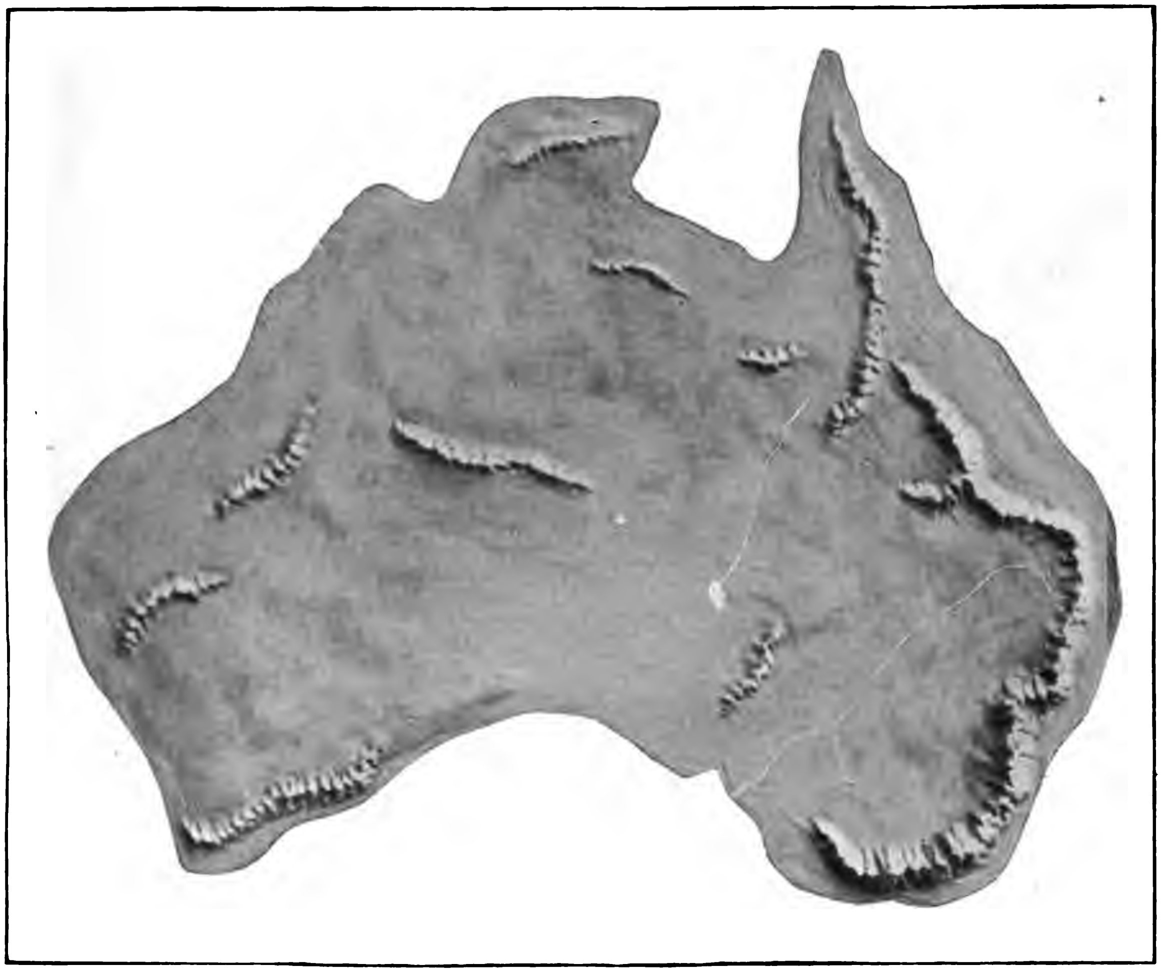
MODEL RELIEF MAP OF ASIA.



MODEL RELIEF MAP OF EUROPE



MODEL RELIEF MAP OF AFRICA.



MODEL RELIEF MAP OF AUSTRALIA.

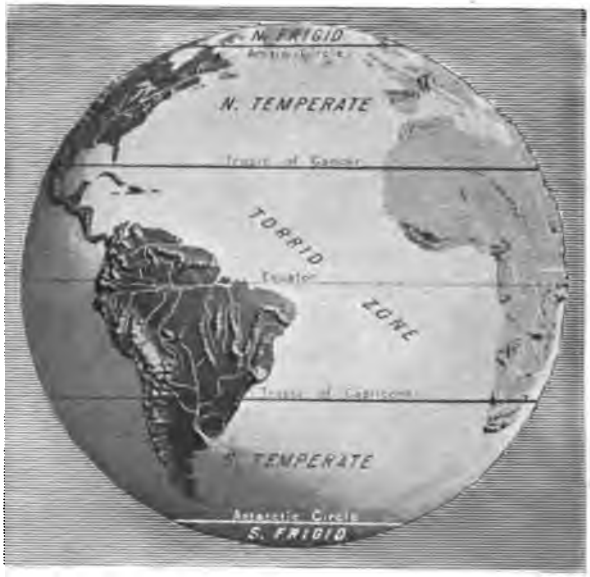
Zones and Circles.[1]

The line round the earth, upon which the vertical rays fall during the first day of our summer, is called the *tropic of Cancer*.

During the first day of our winter the sun shines straight down on the *tropic of Capricorn*. The belt of land and water lying between or within the tropics, is called the *torrid zone*. The tropics are at about one fourth the distance from the equator to the poles.

Find the *arctic circle* on the map. Find the *antarctic circle*. These circles are at about one fourth the distance from the poles to the equator.

Bound the *north frigid zone*. The *south frigid zone*. The *north temperate*. The *south temperate*.



---

[1] This lesson is added for the convenience of teachers who wish to include the study of *zones, tropics* and *polar circles* in the primary course. See page 77.

WORD LIST.

KEY : āle, câre, ăm, ärm, ȧsk, fin*a*l, a̤ll ; ēve, ėvent, ĕnd, hẽr, rec*e*nt ; īce, ĭll ; ōld, ȯbey, fôr, ŏn ; ūse, ŭp, fûr ; fo͞od, fo͝ot ; ch *as in* chop ; g *as in* go ; ng *as in* sing ; n̲ *as in* in̲k ; th *as in* the.

NOTE. — For list of cities and states of the United States, see page 89.

ABYSSINIA	ăb-ĭs-sĭn′ĭ-*a*
AFRICA	ăf′rĭ-k*a*
ALLIGATOR	ăl′lĭ-gā-tẽr
ALPACA	ăl-păk′ȧ
ALTAI	ăl-tī′
AMAZON	ăm′*a*-zŏn
AMSTERDAM	ăm′st*e*r-dăm
AMUR	ä-mo͞or′
ANDES	ăn′dėz
ANTARCTIC	ăn-tärk′tĭk
APPALACHIAN	ăp-pȧ-lā′chĭ-*a*n
APTERYX	ăp′tė-rĭx
ARAB	ăr′ăb
ARABIAN	*a*-rā′bĭ-*a*n
ARCTIC	ärk′tĭk
ARGENTINE	är′jĕn-tīn
ARMADILLO	är-mȧ-dĭl′lȯ
ASIA	ā′shĭ-*a*
ATLANTIC	ăt-lăn′tĭk
AUSTRALIA	a̤s-trā′lĭ-*a*
AUSTRIA	a̤s′trĭ-*a*
AVALANCHE	ăv′ȧ-lănch
AZORES	*a*-zōrz′
BABOON	băb-o͞on′
BACTRIAN	băk′trĭ-*a*n
BALTIC	ba̤l′tĭk
BAMBOO	băm-bo͞o′
BENGAL	bĕn-ga̤l′
BEN-NEVIS	bĕn-nĕv′ĭs
BERING	bē′rĭng
BERLIN	bẽr′lĭn
BERN	bẽrn
BISCAY	bĭs′kā
BISON	bī′sŏn
BOMBAY	bŏm-bā′
BOSPORUS	bŏs′pō-rŭs
BRAZIL	br*a*-zĭl′
BUENOS AYRES	bwā′nōs ī′rĕs
CACTUS	kăk′tŭs
CAIRO (*Egypt*)	kī′rō
CALCUTTA	kăl-kŭt′t*a*
CANADA	kăn′*a*-d*a*
CANCER	kăn′sẽr
CAÑON	kăn′yŭn
CANTON (*China*)	kăn-tŏn′
CAPRICORN	kăp′rĭ-kôrn
CARIBOU	kăr′ĭ-bo͞o
CASCADE	kăs-kād′
CASPIAN	kăs′pĭ-*a*n
CATARACT	kăt′ȧ-răkt
CATSKILL	kăts′kĭl
CHAMOIS	sham′mĭ
CHESAPEAKE	chĕ′s*a*-pēk
CHILE	chē′lĕ
CHIMPANZEE	chĭm-pan′zė
CHUGLU	chŭg′loo
CHUTE	sho͞ot
CLYDE	klīd
COCOON	kȯ-ko͞on′
COLOMBIA	kō-lŏm′bē-ä
COLUMBIA	kȯ-lŭm′bĭ-*a*
CONDOR	kŏn′dŏr
CONSTANTINOPLE	kŏn-stăn-tĭ-nō′pl
CONTINENT	kŏn′tĭ-n*e*nt
CORAL	kŏr′*a*l
CRATER	krā′tẽr
CROCODILE	krŏk′ȯ-dīl
CUBA	kū′b*a*
CYCLADES	sĭk′l*a*-dēz
DANUBE	dăn′ūb
DELTA	dĕl′tȧ
DUBLIN	dŭb′lĭn
DUNKIA	dŭn′k*e*-*a*
DYKE	dīk
ECHIDNA	ė-kĭd′nȧ
EDINBURGH	ĕd′*i*n-bŭr-rȯ
EGYPT	ē′jĭpt
ENGLAND	ĭn̲′gl*a*nd
EQUATOR	ė-kwā′tẽr
ERIE	ē′rĭ
ESKIMO	ĕs′kĭ-mȯ
EUROPE	ū′rŭp
EVEREST	ĕv′*e*r-ĕst
GANGES	găn′jēz
GAVIAL	gā′vĭ-*a*l
GAZELLE	gȧ-zĕl′
GENEVA	j*e*-nē′v*a*
GEYSER	gī′sẽr
GERMANY	jẽr′m*a*-nĭ
GIBRALTAR	jĭ-bra̤l′t*a*r
GIRAFFE	jĭ-răf′
GLACIER	glā′shẽr
GLASGOW	glăs′gō
GORILLA	gȯ-rĭl′lȧ
GUIANA	gē-ä′nä
HAMBURG	hăm′bûrg
HAMMERFEST	häm′m*e*r-fĕst
HANS	häns
HIMALAYA	hĭm-ä′l*a*-y*a*
HINDU	hĭn′do͞o
HIPPOPOTAMUS	hĭp-pȯ-pŏt′ȧ-mŭs
HOLLAND	hŏl′l*a*nd
HONGKONG	hŏng-kŏng′
HORIZON	hȯ-rī′zŭn
HOTTENTOT	hŏt′t*e*n-tŏt

HUNGARY	hŭn̲′g*a*-rĭ
HURON	hū′r*o*n
IBEX	ī′bĕx
INDIA	ĭn′dĭ-*a*
INDIES	ĭn′dēz
INDUS	ĭn′dŭs
IO	ī′ō
IRELAND	īr′l*a*nd
ISTHMUS	ĭs′mŭs
ITALY	ĭt′*a*-lĭ
JAGUAR	jȧ-gwär′
JAPAN	j*a*-păn′
JAPANESE	jăp-ȧ-nēz′
JAVA	jä′v*a*
JAVANESE	jăv-ȧ-nēz′
KAFFIR	kăf′fẽr
KANGAROO	kăn-gȧ-ro͞o′
KAYAK	kä′ăk
KEARSARGE	kẽr′särj
KILIMA-NJARO	kĭl-ė-män-jä-rō′
KONGO	kŏn̲′gō
KORAN	kō′r*a*n
LABRADOR	lăb-r*a*-dōr′
LAPLAND	lăp′l*a*nd
LA PLATA	lä plä′tä
LAVA	lä′vȧ
LEOPARD	lĕp′ẽrd
LES PRÈS	lā prā′
LIMA	lē′mä
LIVERPOOL	lĭv′*e*r-po͞ol
LLAMA	lä′mȧ
LLANOS	lä′nōz
LONDON	lŭn′dŭn
LYONS	lī′*o*nz
MACKENZIE	m*a*-kĕn′zĭ
MADEIRA	m*a*-dē′r*a*
MAIZE	māz
MALAY	m*a*-lā′
MANCHESTER	măn′ch*e*s-t*e*r
MEDITERRANEAN	mĕ-dĭ-t*e*r-rā′nē-*a*n
MELBOURNE	mĕl′bûrn
MESA	mā′sȧ
MEXICO	mĕx′ĭ-kō

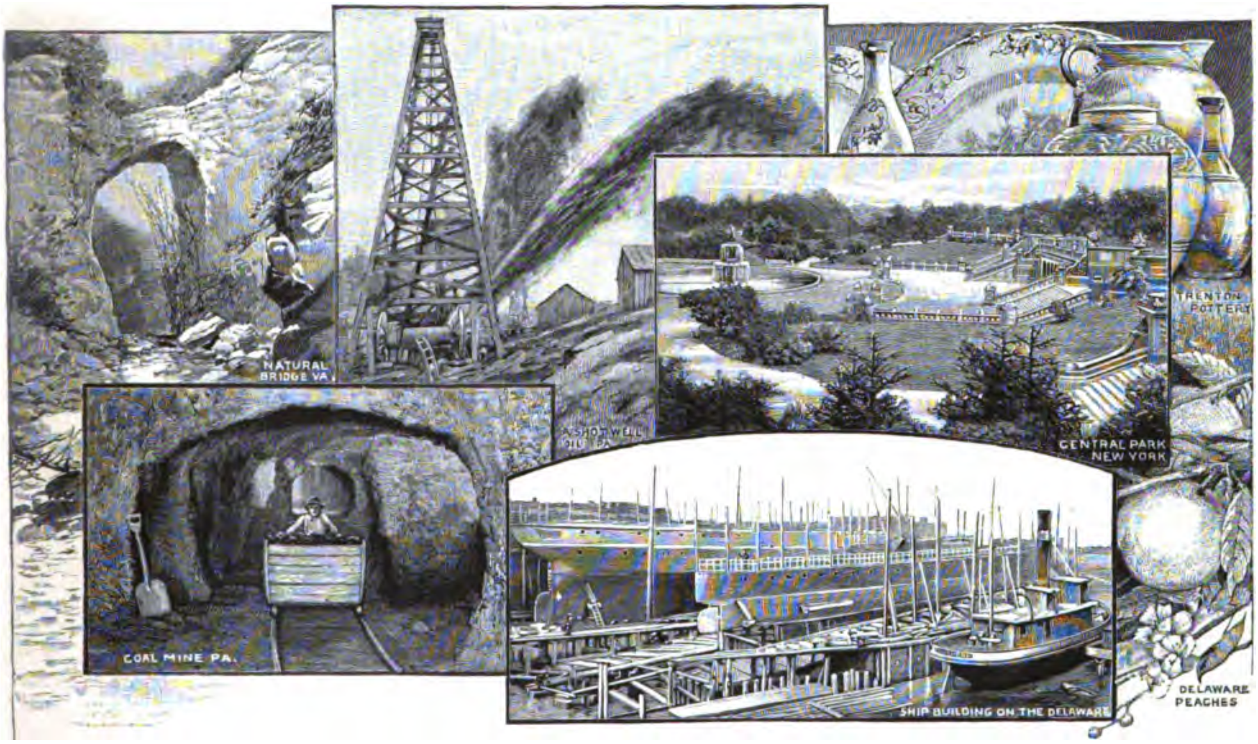
MIKADO	mĭ-kä′dō
MINNEHAHA	mĭn-*e*-hä′hä
MISSISSIPPI	mĭs-ĭs-ĭp′ĭ
MISSOURI	mĭs-o͞o′rĭ
MONT BLANC	mŏnt blän̲k′
MONTREAL	mŏnt-rē-a̤l′
MOSCOW	mŏs′kō
MT. MITCHELL	mĭch′ĕl
MURRAY	mŭr′rā
NETHERLANDS	nĕth′*e*r-l*a*ndz
NEW ZEALAND	zē′l*a*nd
NIAGARA	nī-ăg′*a*-r*a*
NIGER	nī′jer
NITER	nī′tẽr
OASIS	ō′ȧ-sĭs
OBI	ō′bē
ONTARIO	ŏn-tā′rĭ-ō
OPOSSUM	ō-pŏs′sŭm
ORINOCO	ō-rĭ-nō′kō
PACIFIC	p*a*-sĭf′ĭk
PAMIR	pä-mēr′
PAMPAS	păm′pȧz
PANAMA	păn-*a*-mä′
PARÁ	pä-rä′
PARANÁ	pä-rä-nä′
PEKING	pē-kĭng′
PENINSULA	pĕn-ĭn′sū-lȧ
PICO	pē′kō
PLATEAU	plȧ-tō′
POLAR	pō′lẽr
POLYP	pŏl′ĭp
POTOMAC	pō-tō′m*a*k
PRAIRIE	prā′rĭ
PUEBLO	pwĕb′lō
PUMA	pū′mȧ
PYRENEES	pĭr′*e*-nēz
REINDEER	rān′dẽr
RHEA	rē′ȧ
RHINE	rīn
RHINOCEROS	rī-nŏs′ē-rŏs
RIO GRANDE	rē′ō grän′dā
RIO JANEIRO	rē′ō jä-nā′ro
RIO NEGRO	rē′ō nā′grō
RUSSIA	rŭsh′*a*

SAHARA	sa-hä′r*a*
ST. BERNARD	sānt bẽr-närd′
ST. LAWRENCE	la̤′r*e*ns
SAN BERNARDINO	bẽr-när-dē′nō
SAN JACINTO	j*a*-sĭn′tō
SANTIAGO	sän-tē-ä′gō
SCORPION	skôr′pĭ-ŭn
SCOTLAND	skŏt-l*a*nd
SELVAS	sĕl′vȧz
SHOSHONE	shō-shō′nē
SIBERIA	sī-bē′rĭ-*a*
SIERRA NEVADA	sē-ĕr′r*a* n*e*-vä′d*a*
SIMOON	sĭ-mo͞on′
STEPPE	stĕp
STRASSBURG	sträs′bo͝org
STURGEON	stûr′jŭn
SUEZ	so͞o-ĕz′
SUPERIOR	sū-pē′rĭ-ẽr
SWITZERLAND	swĭt′z*e*r-l*a*nd
SYDNEY	sĭd′nĭ
TAPIR	tā′pẽr
TEPEE	tĕp-ē′
THAMES (*Eng.*)	tĕmz
TIBBU	tĭb′bo͞o
TIBET	tĭ-bĕt′
TITICACA	tĭt-ē-kä′kä
TOKYO	tō′kē-ō
TUNDRA	tŭn′drȧ
VALDAI	väl′dī
VALPARAISO	väl-pä-rī′sō
VERA CRUZ	vā-rä kro͞os′
VERTICAL	vẽr′tĭ-k*a*l
VICTORIA	vĭk-tō′rē-*a*
VOLGA	vŏl′gä
WILHELM	wĭl′hĕlm
WATLING	wŏt′lĭng
YANG-TSE-KIANG	yăng-tsē-kĭ-äng′
YENISEI	yĕn-ē-sā′ē
YOKOHAMA	yō-kō-hä′mä
YOSEMITE	yō-sĕm′ĭ-tē
YUKON	yo͞o′kŏn
ZAANDAM	zän-däm′
ZAMBESI	zäm-bā′z*e*

MIDDLE ATLANTIC STATES.

Surface. — In this group of states the Appalachian highland reaches its greatest breadth. Mt. Marcy, the highest peak, is more than a mile in height. Where is this peak?

South from New York the Atlantic slope broadens. In southern Virginia it is over two hundred miles wide. The seacoast of this section is low and sandy.



Rivers. — The Hudson and Delaware rivers are noted routes of trade. The Ohio forms a well-known highway of commerce with the states in the Mississippi valley.

In many of the streams there are rapids and falls. These furnish water power for mills and factories. What have you read about the falls of Niagara? — (*See page 39.*)

Minerals. — These states are very rich in coal, iron ore, petroleum and salt. Building stone and slate abound, and some nickel and zinc are mined.

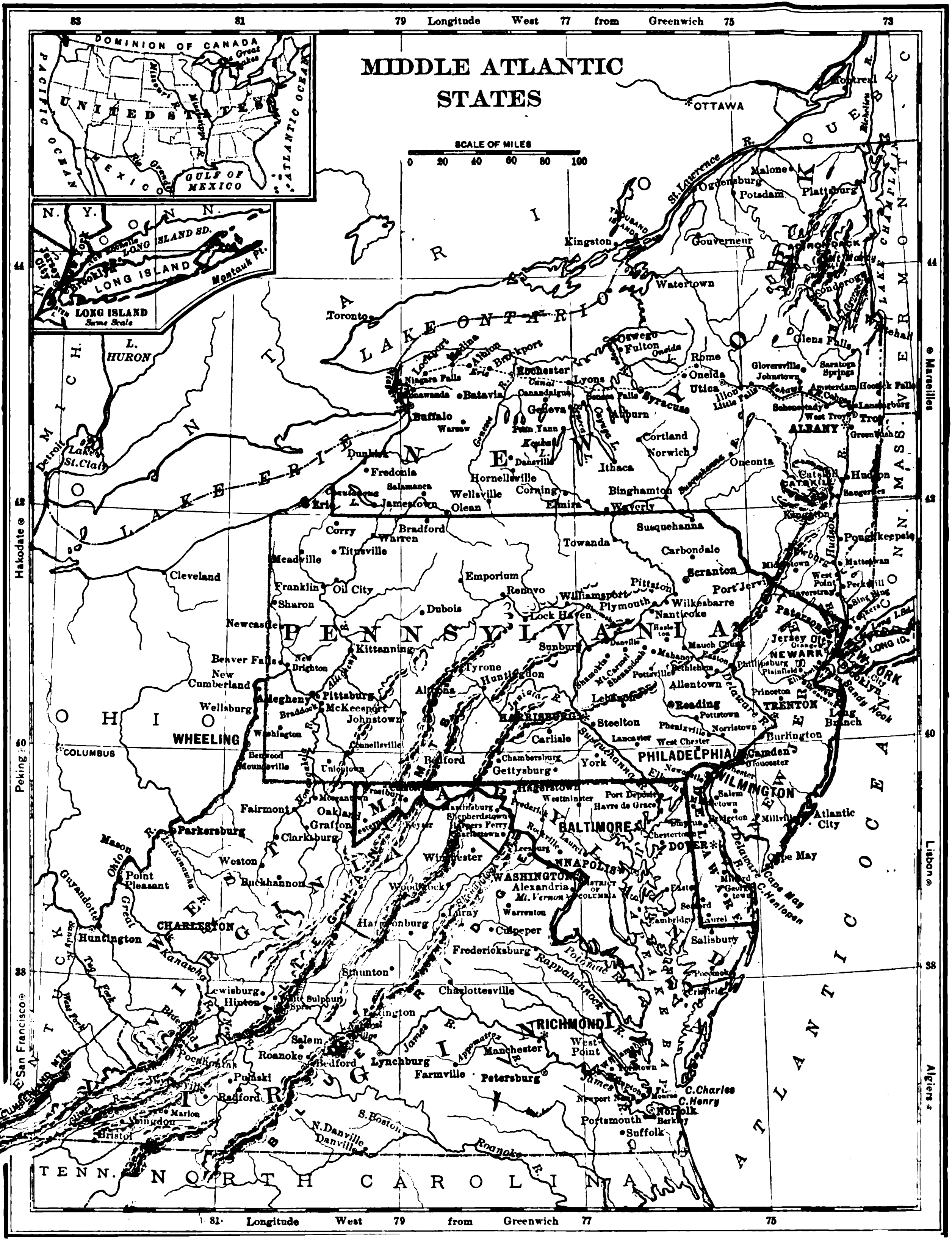
Climate. — The cool belt spreads across this section. In the north the winters are long and severe. In the south the climate is mild, and heavy frosts are rare.

Timber. — Pine forests cover large tracts of the highland region. Oak, elm, black walnut, hickory, maple and chestnut are found in the river valleys. The coast swamps have heavy growths of cypress and cedar.

Farming. — Much of the soil of this section is fertile. Large crops of hay, grain, potatoes and tobacco are raised. The northern portion has long been famous for dairy products, — milk, butter, and cheese.

Great care is given to fruit growing. Grapes are raised in all these states. The peach harvest amounts to millions of bushels every year.

MIDDLE ATLANTIC STATES



MAP STUDIES.

Middle Atlantic States.

Position. — In what part of the Union are the Middle Atlantic States? What states and district form this group?

Name two bays on the Atlantic coast. Where is Sandy Hook? Cape May? Which states have no seacoast?

Surface. — Name two mountain chains in this group of states. Of what great highland do these chains form part? Which state has no mountains? What two groups of mountains are in New York? Name a peak of the Adirondacks.

Rivers and Lakes. — What rivers unite to form the Ohio? Into what great river does the Ohio flow? Describe the course of the Susquehanna river.

Between what states does the Delaware flow? The Potomac? What river connects Lake Erie with Lake Ontario? Where is Lake Champlain? What river flows from this lake into the St. Lawrence?

Water Routes. — On what waters would a steamer go in making a trip from New York to Baltimore? From Philadelphia to Norfolk? From Buffalo to Detroit? From Oswego to Montreal?

New York.

What bodies of water form parts of the boundary of New York? What large island belongs to this state? Where does the Hudson river rise? Into what body of water does it flow? In what parts of New York are there groups of lakes?

Name the capital of New York. Where is New York city? Name a large city on Long Island. Where is Buffalo? Rochester? Syracuse? Oswego? Utica? Troy?

In what direction from New York is Philadelphia? Baltimore? Washington? Richmond? Buffalo? Detroit? Montreal? Which city is the farther north, New York or Liverpool?

Pennsylvania.

Bound Pennsylvania. Which part has the most mountains?

Name the capital. Where is the largest city? Where is Pittsburg? Allegheny? Scranton? Reading? Erie?

New Jersey.

Bound New Jersey. What portion of this state is high land?

Where is the capital? Where is Newark? Jersey City? Paterson? Hoboken? Camden?

Delaware.

Bound Delaware. Which state is the larger, Delaware or Rhode Island? (*See page 118.*)

Name the capital. Where is Wilmington? Newcastle?

Maryland.

Bound Maryland. What large bay enters this state? What part of the state is mountainous?

Where is the capital? Where is Baltimore? Cumberland? Hagerstown?

District of Columbia.

What state bounds this district on three sides? What river flows between it and Virginia? What city in the district? Of what country is Washington the capital?

Virginia.

Bound Virginia. Name two mountain ridges that cross this state.

Where does the James river rise? Into what body of water does it flow?

Where is Richmond? Norfolk? Petersburg? Lynchburg?

West Virginia.

Bound West Virginia. Mention a river that flows across this state. In what direction do most of the streams flow?

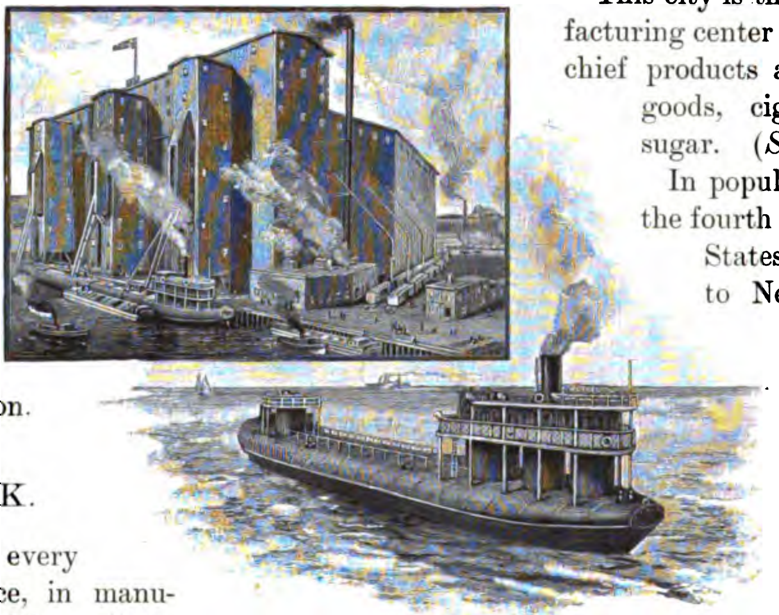
Name the capital. Where is Wheeling? Parkersburg? Huntington?

Manufactures. — The manufactures are of immense value. More iron and steel goods are made here than in all the other states. Tools, machinery and steam engines are among the daily exports of this section. Lumber, leather, pottery, clothing, sugar, tobacco, cloth and flour are leading products.

Shipbuilding is an industry of great importance. Most of the vessels of the new navy were built here.

Commerce. — About three fourths of the foreign commerce of the United States pass through the seaports of this section. Steamship lines connect the chief cities with nearly all the great ports of the world.

A vast trade is also carried on with the other parts of the Union.



Grain Elevator and Whaleback Steamer.

NEW YORK.

This state excels every other in commerce, in manufacturing, in wealth and in number of people. New York is therefore often called the *Empire State.*

Nearly one tenth of the people in the Union live in this state. About one seventh of the wealth of the whole country is held here.

New York ranks first in the production of hay, potatoes, apples, butter and cheese. Thousands of tons of grapes are raised in the river and lake valleys.

Much timber is cut in the north of the state. The central part yields salt in large amounts. The iron mines rank among the richest in the Union. (*See map on page 98.*)

New York has several canals. The longest is the Erie canal. It leads from Buffalo to Albany, and thus connects Lake Erie with the Hudson river. On this canal large boats carry grain, lumber and other products.

Albany is the capital. The leading articles made here are stoves, hardware, boots and shoes. This city is a center of the lumber trade and is a large cattle market.

New York, on New York bay, is the largest city in America, and one of the greatest seaports in the world.

This city is the foremost manufacturing center in America. The chief products are clothing, iron goods, cigars, books and sugar. (*See page 101.*)

In population **Brooklyn** is the fourth city in the United States. It is joined to New York by the longest suspension bridge in the world.

Brooklyn has large sugar works, warehouses, grain elevators and iron mills.

Buffalo has a fine harbor and carries on a great trade in lumber, coal, grain, iron and live stock. There are many large iron works, machine shops and factories in Buffalo.

This city owes its growth mainly to railroads and to the Erie canal.

Rochester is famed for its flour mills. This city has vast water power in the falls of the Genesee river and makes clothing, boots, shoes and iron goods.

The largest carriage factory in the United States is in Rochester.

Syracuse, a thriving city, is a noted center of salt making. Many kinds of heavy iron goods are made here.

Syracuse is in a rich farming region and has an active trade in farm products.

Troy is at the head of steamboat travel on the Hudson river. Woven goods, carriages and iron wares are made here. The best-known manufactures of this city are collars and cuffs.

Utica is the largest cheese market in the United States. Machines, leather goods, organs and cloth are the chief manufactures.

Other important places are: **Auburn,** farm tools, woolen and cotton goods; **Binghamton,** machines and leather articles; **Cohoes,** edge tools and cotton cloth; **Elmira,** steam engines; **Long Island City,** oil and chemical works; **Newburg,** iron products; **Oswego,** starch; **Poughkeepsie,** farm machines; **Yonkers,** carpets.

NEW JERSEY.

Mountains cross the northern part of this state, but the other parts are low and level.

Zinc and iron are mined in the mountain region. Potter's clay is found in the central portion of the state. In the production of earthenware and silk goods New Jersey holds the first place in the Union.

Garden products and fruits in large amount are raised for the markets of New York and Philadelphia.

Trenton, the capital, is noted for its great potteries. Here also are iron mills, zinc works and rubber factories.

Newark is the largest city. Its manufactures are various and important. Patent leather, metal goods, clothing, rubber articles, hats and jewelry are among the leading products.

Jersey City is a great railroad center and seaport. This city has a large trade in iron, coal and grain.

Paterson, at the falls of the Passaic river, makes locomotives and cotton goods. It is famed for its silk mills.

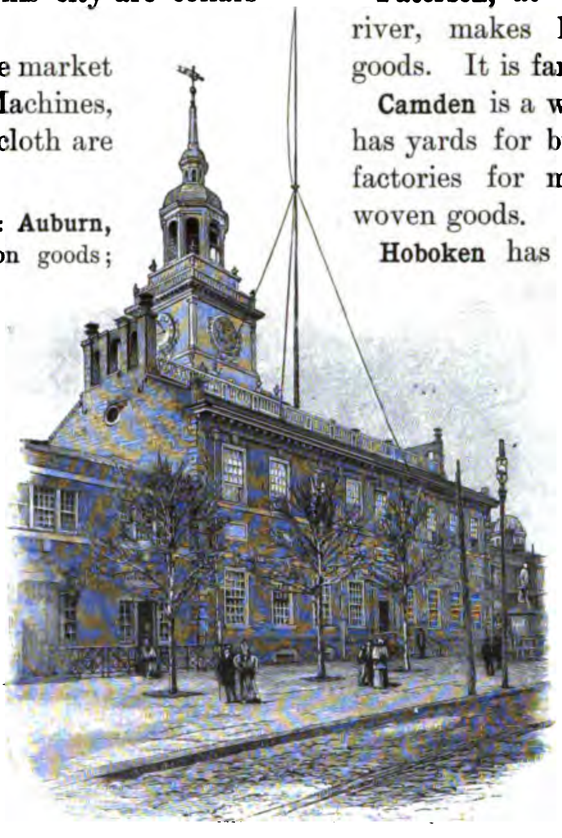
Camden is a well-known river port. It has yards for building steel vessels, and factories for making boots, shoes and woven goods.

Hoboken has a large shipping trade. Coal is the chief export. The manufactures include lead pencils and iron goods.

Elizabeth manufactures hats, pottery, edge tools, oilcloth and sewing machines.

New Brunswick is a noted center of rubber manufacturing.

Atlantic City, Long Branch and **Cape May** are famous summer resorts.


Independence Hall, Philadelphia.

PENNSYLVANIA.

Pennsylvania is the first state in the Union in mining, and the second in manufacturing.

About one fifth of the state is thickly wooded. Lumbering is one of the main sources of wealth. Much hemlock timber is cut. The bark is sent to tanneries and is used in making leather.

Pennsylvania outranks every other state in the production of coal and petroleum and in the manufacture of iron and steel. (*See maps on pages 97 and 98.*)

Hard coal is mined in the eastern part, soft coal in the western half of the state.

Pennsylvania has thousands of fine farms. Grain, potatoes and tobacco are raised in large amounts.

The live stock is of great value.

Harrisburg, on the Susquehanna, is the capital. The river is much used for rafting logs, and the city has a large trade in lumber.

Oyster Fishing.

In number of people **Philadelphia** is the third city in the United States. It is second in value of manufactures and is the largest coal mart in the world.

The leading products of its many mills, factories and machine shops are carpets, woolens, cottons, iron and steel goods, oils, sugar and drugs.

This city has the largest shipyard on the globe. Some of our finest war steamers were built here.

Philadelphia is noted for its fine parks and public buildings.

Pittsburg is in the midst of a great coal field. Many iron mines are near by.

This city is far-famed for metal manufactures. Here are made almost all kinds of iron and steel goods, — from tacks to cannon.

Pittsburg is the chief center of glass-making in the United States.

In Pittsburg, and in a large region around it, natural gas is much used in place of coal. This gas is obtained by drilling deep wells in the earth. The gas rushes up with force enough to send it for many miles through iron pipes.

Allegheny has many iron mills and machine works. Here also are cotton and woolen factories, flour mills and tanneries.

Natural gas is used in Allegheny.

Both Allegheny and Pittsburg are river ports and have a large commerce. Iron and coal in great amounts are shipped from these cities.

Scranton is in the hard coal region, and has an active trade in coal and in mining supplies. Its manufactures include many kinds of iron goods.

Reading is a railroad center. There are rich iron mines near by, and iron working is the main industry.

Erie is the chief lake port of this state and has a brisk commerce in grain, iron ore, coal and lumber. Among its manufactures are flour and iron goods.

Erie is the market for the farm products of a large part of northwest Pennsylvania.

Other important places are :

Allentown, iron goods; **Altoona,** locomotives and cars; **Chester,** steel steamers; **Johnstown,** iron and steel goods; **Lancaster,** farm products and cotton goods; **McKeesport,** glass and iron; **Wilkesbarre,** hard coal and iron wares; **Williamsport,** lumber.

DELAWARE.

Delaware is wholly in the plain of the Atlantic slope. The surface of the state is nearly level.

Grain and vegetables are raised. The state has long been noted for the excellence of its fruits. Peach growing is a leading industry.

Dover, the capital, is in a great fruit district. Thousands of bushels of fruits are canned here yearly.

Wilmington builds steel steamers, railroad cars and engines. It has mills for making flour, paper and gunpowder.

Newcastle contains iron and steel works.

The White House.

Washington Monument.

Capitol, Washington.

MARYLAND.

Maryland is a fine farming state. Grain and tobacco are the chief crops. Fruit is raised in the eastern part.

The northwest is hilly and has rich mines of coal and iron. (*See maps on pages 97 and 98.*)

Oyster fishing is an industry of great value. Oysters are dredged up all along the shores of Chesapeake bay.

Annapolis, the capital, is the seat of the United States Naval Academy.

Baltimore is one of the leading cities of the United States. Its exports of flour, grain, tobacco, meat, oysters and canned goods are very large. The manufactures include clothing, preserved meats, tobacco goods and iron products.

The building of steel vessels is an important industry.

Cumberland has iron mills and glass works. It is near rich coal mines and has a large export trade in coal.

DISTRICT OF COLUMBIA.

This tract of land is under the control of Congress.

Washington is the capital of the United States. It has but few manufactures and no foreign commerce.

The city is famous for its fine public buildings. The Washington Monument is the highest stone structure ever built.

Congress meets in the Capitol. This building is the grandest on the globe. The White House is the home of the President.

The public schools of Washington rank among the best in the Union.

VIRGINIA.

The coast of Virginia is swampy. In the central part of the state the surface is high and rolling. Mountain ridges run through the west.

Farming is the chief industry in Virginia. Tobacco and grain are leading crops. In the southeastern part early vegetables and fruits are raised for the markets of northern cities.

Large tracts of the highland region are covered with forests.

Coal and iron ore are mined in the southwest. Oyster fishing is carried on along the shores of Chesapeake bay.

Manufactures are here growing very fast.

Virginia has given seven presidents to the Union.

Jamestown in this state was the first town built by English people in America.

Richmond is the capital and largest city. It has fine water power in falls of the James river. For half a century Richmond has been noted for its manufactures of flour and tobacco. Heavy iron goods also are made here.

Norfolk has a fine harbor and a growing commerce. Oysters, cotton, coal and early vegetables are shipped from this port.

The United States has a large navy yard in Norfolk.

Petersburg is at the falls of the Appomattox river. These supply water power to foundries, cotton mills and a large number of tobacco factories.

This city is an active market for grain and raw cotton.

Lynchburg has a beautiful site on the James river. Manufacturing is the main industry. Iron wares and tobacco goods are the leading products.

WEST VIRGINIA.

Most of West Virginia is in the Mississippi basin. Much of the state is ridged with mountains. The valleys have rich farm land. Grain, hay and potatoes are the chief crops.

West Virginia has thousands of acres of woodland, and the lumber trade is very active.

Salt and petroleum are produced in great quantities. Natural gas is found in the northwest.

Coal and iron are the main sources of wealth. The coal fields spread over most of the state.

Charleston is the capital. There are vast salt works near this city. It exports salt, coal and lumber in large amounts.

Wheeling, the chief city, is a well-known river port.

The iron and glass manufactures are very important. Wheeling has the largest nail works in the Union.

Parkersburg is the main market for the state's oil product.

Huntington is noted for its rapid growth. It is now an important center of manufacturing.

White Sulphur Springs is a famous summer resort.

MIDDLE ATLANTIC STATES WORD LIST.

ADIRONDACK	ăd-*i*-rŏn′dăk	APPOMATTOX	ăp′-pŏ-măt′t*o*ks	BUFFALO	bŭf′f*a*-lō
ALLEGHANY	ăl′*e*-gā-nĭ	AUBURN	a̤′bûrn		
ALLEGHENY	ăl′*e*-gā-nĭ			**C**AMDEN	kăm′d*e*n
ALLENTOWN	ăl′ĕn-town	**B**ALTIMORE	ba̤l′tĭ-m*o*r	CATSKILL	kăts′kĭl
ALTOONA	ăl-tōō′n*a*	BINGHAMTON	bĭng′*a*m-t*o*n	CAYUGA	kȧ-yōō′g*a*
ANNAPOLIS	ăn-năp′ô-lĭs	BROOKLYN	bro͝ok′lĭn	CHAMPLAIN	shăm-plān′

CHARLESTON	chärlz′t*o*n
CHAUTAUQUA	sh*a*-ta̤′kw*a*
CHESAPEAKE	chĕs′*a*-pēk
CHESTER	chĕs′t*e*r
COHOES	kȯ-hōz′
COLUMBIA	kȯ-lŭm′bĭ-*a*
CUMBERLAND	kŭm′b*e*r-l*a*nd
DETROIT	d*e*-troit′
DOVER	dō′v*e*r
ELMIRA	ĕl-mī′r*a*
GENESEE	jĕn-*e*-sē′
HAGERSTOWN	hā′gerz-town
HARRISBURG	hăr′ĭs-bûrg
HOBOKEN	hō′bȯ-k*e*n
HUNTINGTON	hŭnt′ĭng-t*o*n
JOHNSTOWN	jŏnz′town
KANAWHA	k*a*-na̤′w*a*
LANCASTER	lăn̲k′*a*s-t*e*r
LYNCHBURG	lĭnch′bûrg
MARCY	mär′sĭ
MCKEESPORT	m*a*-kēz′pōrt
MOHAWK	mō′ha̤k
MONONGAHELA	mō-nŏn-g*a*-hē′l*a*
NEWARK	nū′*a*rk
NEWBURG	nū′bûrg
NEWCASTLE	nū′căs-l
NIAGARA	nī-ăg′*a*-r*a*
NORFOLK	nôr′f*o*k
ONEIDA	ȯ-nī′d*a*
ONTARIO	ŏn-tā′rĭ-ō
OSWEGO	ŏs-wē′gō
PARKERSBURG	pär′kerz-bûrg
PATERSON	păt′*e*r-s*o*n
PETERSBURG	pē′terz-bûrg
PITTSBURG	pĭts′bûrg
POTOMAC	pō-tō′m*a*k
POUGHKEEPSIE	p*o*-kĭp′sĭ
RAPPAHANNOCK	răp-*a*-hăn′*o*k
READING	rĕd′ĭng
RICHELIEU	rė-sh*e*-lo͞o′
RICHMOND	rĭch′m*o*nd
ROCHESTER	rŏch′*e*s-t*e*r
SCRANTON	skrăn′t*o*n
SUSQUEHANNA	sŭs-kw*e*-hăn′*a*
SYRACUSE	sĭr′*a*-kūs
TRENTON	trĕn′t*o*n
UTICA	ū′tĭ-k*a*
WHEELING	hwēl′ĭng
WILKESBARRE	wĭlks′băr-ĭ
WILLIAMSPORT	wĭl′y*a*mz-pōrt
WILMINGTON	wĭl′mĭng-t*o*n
YONKERS	yŏn̲k′*e*rz
YORK	yôrk

KEY: āle, ăm, ärm, fin*a*l, a̤ll ; ēve, ėvent, ĕnd, hẽr, rec*e*nt ; īce, ĭll ; ōld, ȯbey, ôrb, ŏn ; ūse, ŭp, fûr ; fo͞od ; ch *as in* **chair**; g *as in* **go** ; n̲ *as in* **in̲k** ; th *as in* **thin**.

THE NEW YORK PUBLIC LIBRARY
REFERENCE DEPARTMENT

This book is under no circumstances to be taken from the Building

FEB 7 1918	1/21/19	
JUL 16 1918	1/22/19	
	1-23-19	
JUL 23 1918		
AUG 19		
[illegible]		
JAN 11		
JAN 11		
1.4.19		
1.6.19		
1.10-19		
1.14-19		
1.15.19		
1 20 19		

form 419

3'D JUN 25 1915